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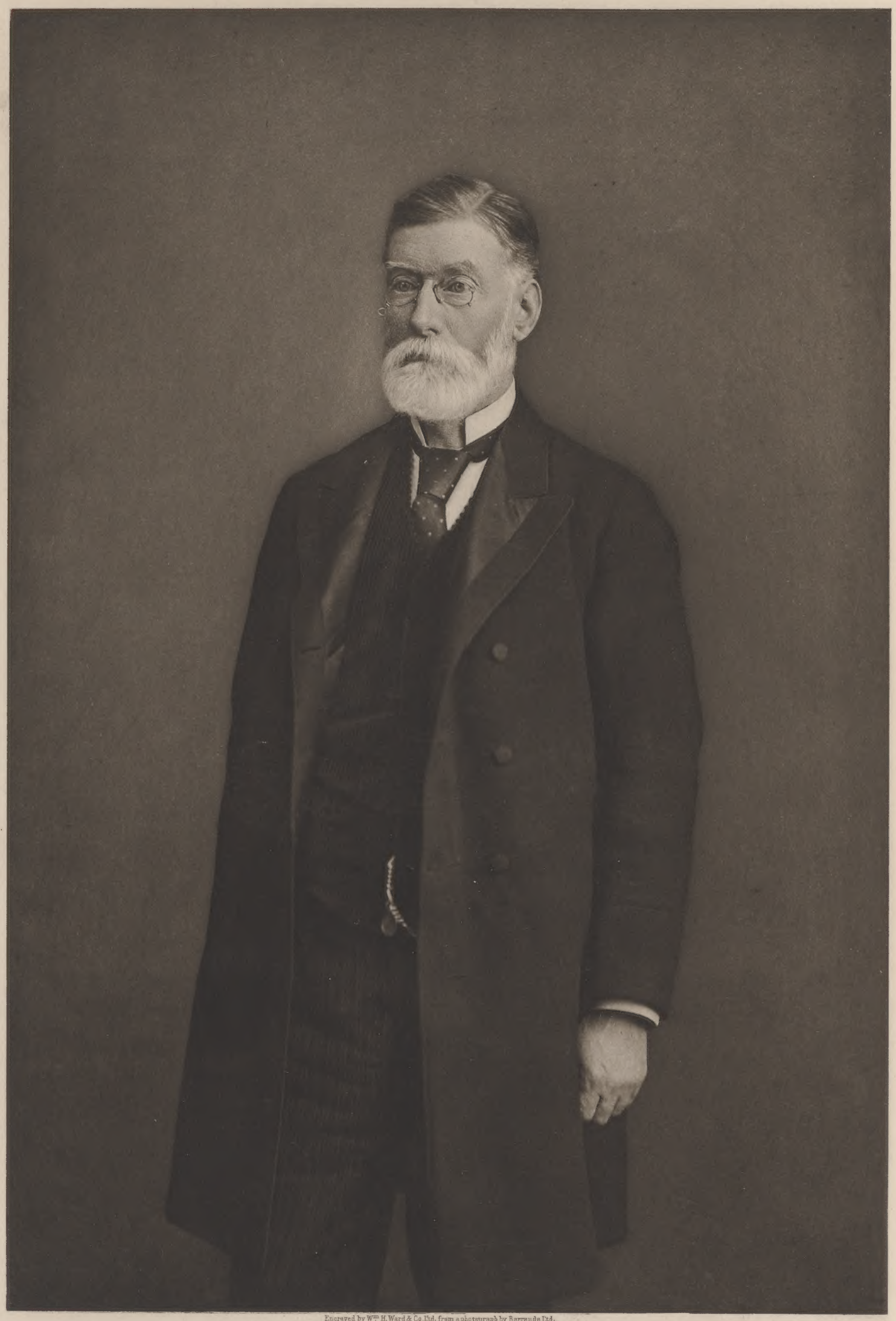

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Yours truly
Henry Fredbam

A

MONOGRAPH OF THE TURDIDÆ.

OR

FAMILY OF THRUSHES.

BY THE LATE

HENRY SEEBOHM,

AUTHOR OF 'SIBERIA IN EUROPE,' 'SIBERIA IN ASIA,' 'CATALOGUE OF THE BIRDS IN THE BRITISH MUSEUM' (VOL. V),
'A HISTORY OF BRITISH BIRDS,' 'THE GEOGRAPHICAL DISTRIBUTION OF THE CHARADRIIDÆ,'
'BIRDS OF THE JAPANESE EMPIRE,' 'THE CLASSIFICATION OF BIRDS,'
'COLOURED FIGURES OF THE EGGS OF BRITISH BIRDS,' ETC.

EDITED AND COMPLETED

(AFTER THE AUTHOR'S DEATH)

BY

R. BOWDLER SHARPE, LL.D., F.L.S., ETC.

ASSISTANT-KEEPER, SUB-DEPARTMENT OF VERTEBRATA, BRITISH MUSEUM.

VOLUME I.

A LONDON:

HENRY SOTHERAN & CO.,

37 PICCADILLY, W., AND 140 STRAND, W.C.

1902.

Oiled 5/1983 LM

aq 1/2
79 plates with
bk 1-78

ALERE FLAMMAM.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

INTRODUCTION.

In the present work I trust that I have carried out the intentions of my friend, the late Mr. Henry Seebohm, when he conceived the idea of writing a 'Monograph of the *Turdidæ*, or Family of Thrushes.' Shortly after the completion of the fifth volume of the 'Catalogue of Birds,' Mr. Seebohm made preparations to publish a Monograph of the Thrushes, a group of birds of which at that time he had a profound knowledge, and until his death in 1895 he continued to employ Mr. Keulemans in drawing the Plates for the book which he intended to issue. Nearly all the Plates which illustrate the present volumes were prepared during Mr. Seebohm's lifetime, and were coloured in anticipation of their speedy publication. Several have been since added by the Publishers in order to bring the work up to date.

A packet of MSS. of considerable size, supposed to have been the Author's material for the Monograph, passed into the hands of the Publishers along with the series of coloured Plates which were to illustrate the book. On closer examination this parcel of MSS. was found to consist merely of the descriptions of the species of the genus *Geocichla*, while the final series of Plates (doubtless owing to the author's illness) had evidently never been examined by him. The colouring of these Plates was found to be by no means good, and they have all had to be re-coloured, a proceeding which has involved much loss of time and expense to the Publishers.

The undersigned, who had simply undertaken to *edit* his friend's MSS., thus found himself called upon to *write* three-quarters of the book—a task which, with his burden of other official and private work, he would never knowingly have undertaken, since the increase of his official duties occupies much of his private time. The result has been that considerable delay has taken place in the completion of the 'Monograph,' as the compilation of some of the articles in the present volumes has involved the sacrifice of all his available time, for weeks together. He has to apologize to the Subscribers for this delay, which has been irritating to all concerned; but the Editor trusts that his labours have not been in vain, and that the Author would have been satisfied with the work as now completed.

One of the greatest of Mr. Seebohm's discoveries in ornithology was the application of the character of the plumage of the young birds for the differentiation of the Thrushes (*Turdidæ*) from the Warblers (*Sylviidæ*). The former have but *one* moult in the year, while the latter have *two*—one in autumn and another in spring. The young Thrushes have a spotted plumage, while the young Warblers have a plain dress, not very different from the plumage of their parents.

Among the *Turdidæ*, therefore, should have been placed, not only the true Thrushes, but also all *Saxicolæ* (Wheatears), *Cossyphæ* (Robin-Thrushes), *Erithaci* (Robins, Nightingales, Bluethroats, &c.), *Pratincolæ* (Stonechats, &c.), and many other birds with spotted young and a single (autumnal) moult. Of this vast group but a small portion falls under the heading of the present Monograph, and the title of the work is therefore somewhat of a misnomer, as the book deals with the true Thrushes only; but of these the account will, it is hoped, be found to be tolerably complete. The Monograph follows the lines of Mr. Seebohm's volume of the 'Catalogue of Birds'—an arrangement which has been somewhat modified in recent years by the researches of American naturalists, Dr. Stejneger, Mr. Oberholser, and others, and by Mr. Eugene W. Oates in England.

In repeating my sincere apologies to the Subscribers for the unavoidable delay which has taken place in the completion of the work, I cannot omit to thank the Publishers for the generous manner in which they have provided new coloured Plates for such species as were discovered during the earlier progress of the work. Such new species as it was not possible to illustrate will be found duly recorded in the "Table of Contents" and in the "Appendix" to the second volume.

R. BOWDLER SHARPE.

Chiswick, December 1902.

LIST OF CONTENTS.

VOLUME I.

	Page
Titlepage	i
Introduction	iii
List of Contents	v
List of Plates	ix

		Page
GEOCICHLA	VARIA	1
,,	DAUMA	9
,,	NILGIRIENSIS	13
,,	IMBRICATA	15
,,	HORSFIELDI	17
,,	PAPUENSIS	19
,,	CUNEATA	21
,,	HEINII	23
,,	LUNULATA	25
,,	MACRORHYNCHA	27
,,	MOLLISSIMA	29
,,	SPILOPTERA	31
,,	GUTTATA	33
,,	FISCHERI	Vol. ii. Add. 241
,,	PRINCII	35
,,	COMPSONATA	Vol. ii. App. 227
,,	CROSSLEYI	37
,,	GURNEYI	39
,,	KILIMENSIS	Vol. ii. App. 228
,,	PIAGGIÆ	41
,,	MACHIKI	43
,,	PERONII	45
,,	AUDACIS	Vol. ii. App. 228, 241
,,	ERYTHRONOTA	47

		Page
GEOCICHLA	INTERPRES	49
,,	DOHERTYI	51
,,	DUMASI	Vol. ii. App. 229
,,	FRONTALIS	Vol. ii. App. 230
,,	LEUCOLÆMA	53
,,	CYANONOTA	55
,,	ALBIGULARIS	59
,,	CITRINA	61
,,	INNOTATA	65
,,	ANDAMANENSIS	67
,,	RUBECULA	69
,,	AURATA	71
,,	EVERETTI	73
,,	MONTICOLA	75
,,	ANDROMEDA	77
,,	MARGINATA	79
,,	NÆVIA	83
,,	WARDI	89
,,	SCHISTACEA	93
,,	CINEREA	Vol. ii. App. 231
,,	PINICOLA	95
,,	SIBIRICA	97
,,	DAVISONI	101
,,	LITSITSIRUPA	103
,,	STIERLINGI	Vol. ii. App. 232
,,	SEMIENSIS	105
,,	TERRESTRIS	107
TURDUS	MARAÑONICUS	109
,,	BEWSHERI	111
,,	OLIVACEIFUSCUS	113
,,	XANTHORHYNCHUS	Vol. ii. Add. 241
,,	HERMINIERI	115
,,	LAWRENCII	117
,,	SANCTÆ-LUCIÆ	119
,,	DOMINICENSIS	121
,,	ILIACUS	123
,,	COBURNI	Vol. ii. App. 232
,,	MUSICUS	131

	Page
TURDUS AURITUS	137
„ VISCIVORUS	139
„ MUSTELINUS	147
„ FUSCESCENS	153
„ SALICICOLA	159
„ ALICIÆ	163
„ BICKNELLI	169
„ USTULATUS	175
„ ALMÆ	Vol. ii. App. 234
„ ŒDICUS	Vol. ii. App. 234
„ SWAINSONI	179
„ PALLASI	185
„ AONALASCHKÆ	P. 193; Vol. ii. App. 234
„ AUDUBONI	197
„ PILARIS	201
„ JAMAICENSIS	211
„ PHÆOPYGUS	213
„ MINUSCULUS	Vol. ii. App. 235
„ PHÆOPYGOIDES	215
„ SPODIOLÆMUS	217
„ TRISTIS	219
„ LEUCAUCHEN	223
„ DAGUÆ	225
„ CROTOPEZUS	227
„ CONTEMPTUS	Vol. ii. App. 235
„ ALBICOLLIS	229
„ GYMNOPHTHALMUS	231
„ LEUCOMELAS	235
„ MACULIROSTRIS	P. 239; Vol. ii. App. 236
„ IGNOBILIS	P. 241; Vol. ii. App. 236
„ MURINUS	243
„ COMORENSIS	245
„ PLEBEIUS	247
„ DIFFERENS	Vol. ii. Add. 242
„ OBSOLETUS	249
„ HAUXWELLI	251
„ NIGRIROSTRIS	253
„ COLOMBIANUS	Vol. ii. App. 236

		Page
TURDUS	FUMIGATUS	255
,,	ALBIVENTER	257
,,	FUSUS	Vol. ii. App. 237
,,	GRAYI	261
,,	CONFINIS	267
,,	MIGRATORIUS	269
,,	ACHRASTERUS	Vol. ii. App. 237
,,	PROPINQUUS	285
,,	RUFIVENTER	291
,,	MAGELLANICUS	295
,,	FALKLANDICUS	297
,,	FLAVIROSTRIS	299
,,	GRAYSONI	301
,,	CHIGUANCO	303
,,	CONRADI	Vol. ii. App. 238
,,	TEPHRONOTUS	305
,,	OLIVACEUS	307
,,	ABYSSINICUS	309
,,	ELGONENSIS	311
,,	CABANISI	313
,,	DECKENI	315
,,	MILANJENSIS	317
,,	LIBONYANUS	P. 319; Vol. ii. App. 238
,,	TROPICALIS	321
,,	VERREAUXI	323
,,	CINERASCENS	325
,,	PELIOS	327
,,	SATURATUS	329
,,	BOCAGII	331
,,	STORMSI	333
,,	CRYPTOPYRRHUS	335
,,	NIGRILORUM	337

LIST OF PLATES.

VOLUME I.

PORTRAIT OF MR. SEEBOHM . . . . . *Frontispiece*

Plate	I.	GEOCICHLA VARIA (fig. 1)	*to face page*	1
		,, HANCII (fig. 2)		
,,	II.	,, DAUMA (fig. 1)	,,	9
		,, PARVIROSTRIS (fig. 2)		
,,	III.	,, NILGIRIENSIS	,,	13
,,	IV.	,, IMBRICATA	,,	15
,,	V.	,, HORSFIELDI	,,	17
,,	VI.	,, HEINII (fig. 1)	,,	19
		,, PAPUENSIS (fig. 2)		
,,	VII.	,, CUNEATA	,,	21
,,	VIII.	,, LUNULATA (fig. 1)	,,	25
		,, MACRORHYNCHA (fig. 2)		
,,	IX.	,, DIXONI (fig. 1)	,,	29
		,, MOLLISSIMA (fig. 2)		
,,	X.	,, SPILOPTERA	,,	31
,,	XI.	,, PRINCII (fig. 1)	,,	33
		,, GUTTATA (fig. 2)		
,,	XII.	,, GURNEYI (fig. 1)	,,	37
		,, CROSSLEYI (fig. 2)		
,,	XIII.	,, PIAGGIÆ	,,	41
,,	XIV.	,, MACHIKI	,,	43
,,	XV.	,, ERYTHRONOTA (fig. 1)	,,	45
		,, PERONII (fig. 2)		
,,	XVI.	,, INTERPRES (fig. 1)	,,	49
		,, AVENSIS (fig. 2)		
,,	XVII.	,, DOHERTYI	,,	51
,,	XVIII.	,, LEUCOLÆMA	,,	53

Plate	XIX.	GEOCICHLA CYANONOTA (fig. 1) „ ALBIGULARIS (fig. 2)	. . . . .	*to face page*	55
„	XX.	„ CITRINA (fig. 1) „ INNOTATA (fig. 2)	. . . . .	„	61
„	XXI.	„ ANDAMANENSIS (fig. 1) „ RUBECULA (fig. 2)	. . . . .	„	67
„	XXII.	„ AURATA	. . . . .	„	71
„	XXIII.	„ EVERETTI	. . . . .	„	73
„	XXIV.	„ MONTICOLA	. . . . .	„	75
„	XXV.	„ ANDROMEDA (fig. 1) „ MARGINATA (fig. 2)	. . . . .	„	77
„	XXVI.	„ NÆVIA	. . . . .	„	83
„	XXVII.	„ WARDI	. . . . .	„	89
„	XXVIII.	„ SCHISTACEA	. . . . .	„	93
„	XXIX.	„ PINICOLA	. . . . .	„	95
„	XXX.	„ SIBIRICA	. . . . .	„	97
„	XXXI.	„ DAVISONI	. . . . .	„	101
„	XXXII.	„ LITSITSIRUPA (fig. 1) „ SEMIENSIS (fig. 2)	. . . . .	„	103
„	XXXIII.	„ TERRESTRIS	. . . . .	„	107
„	XXXIV.	TURDUS MARAÑONICUS	. . . . .	„	109
„	XXXV.	„ BEWSHERI	. . . . .	„	111
„	XXXVI.	„ OLIVACEIFUSCUS	. . . . .	„	113
„	XXXVII.	„ HERMINIERI (fig. 1) „ SANCTÆ-LUCIÆ (fig. 2)	. . . . .	„	115
„	XXXVIII.	„ DOMINICENSIS	. . . . .	„	121
„	XXXIX.	„ ILIACUS	. . . . .	„	123
„	XL.	„ MUSICUS	. . . . .	„	131
„	XLI.	„ AURITUS	. . . . .	„	137
„	XLII.	„ VISCIVORUS	. . . . .	„	139
„	XLIII.	„ MUSTELINUS	. . . . .	„	147
„	XLIV.	„ FUSCESCENS	. . . . .	„	153
„	XLV.	„ ALICIÆ (fig. 1) „ USTULATUS (fig. 2) „ SWAINSONI (fig. 3)	. . . . .	„	163
„	XLVI.	„ AUDUBONI (fig. 1) „ PALLASI (fig. 2)	. . . . .	„	197
„	XLVII.	„ PILARIS	. . . . .	„	201

Plate	XLVIII.	TURDUS JAMAICENSIS		*to face page*	211
,,	XLIX.	,, PHÆOPYGUS (fig. 1) ,, PHÆOPYGOIDES (fig. 2)		,,	213
,,	L.	,, CROTOPEZUS (fig. 1) ,, TRISTIS (fig. 2)		,,	219
,,	LI.	,, LEUCAUCHEN		,,	223
,,	LII.	,, ALBICOLLIS		,,	229
,,	LIII.	,, LEUCOMELAS (fig. 1) ,, GYMNOPHTHALMUS (fig. 2)		,,	235
,,	LIV.	,, MURINUS		,,	243
,,	LV.	,, COMORENSIS		,,	245
,,	LVI.	,, PLEBEIUS		,,	247
,,	LVII.	,, OBSOLETUS		,,	249
,,	LVIII.	,, FUMIGATUS (fig. 1) ,, HAUXWELLI (fig. 2)		,,	255
,,	LIX.	,, ALBIVENTER		,,	257
,,	LX.	,, GRAYI (fig. 1) ,, CASIUS (fig. 2)		,,	261
,,	LXI.	,, CONFINIS		,,	267
,,	LXII.	,, MIGRATORIUS		,,	269
,,	LXIII.	,, ,,		,,	269
,,	LXIV.	,, RUFIVENTER		,,	291
,,	LXV.	,, MAGELLANICUS		,,	295
,,	LXVI.	,, FALKLANDICUS		,,	297
,,	LXVII.	,, FLAVIROSTRIS		,,	299
,,	LXVIII.	,, GRAYSONI		,,	301
,,	LXIX.	,, CHIGUANCO		,,	303
,,	LXX.	,, TEPHRONOTUS		,,	305
,,	LXXI.	,, OLIVACEUS (fig. 1) ,, ABYSSINICUS (fig. 2)		,,	307
,,	LXXII.	,, ELGONENSIS		,,	311
,,	LXXIII.	,, CABANISI		,,	313
,,	LXXIV.	,, MILANJENSIS		,,	317
,,	LXXV.	,, LIBONYANUS		,,	319
,,	LXXVI.	,, PELIOS (fig. 1) ,, SATURATUS (fig. 2)		,,	327
,,	LXXVII.	,, STORMSI		,,	333
,,	LXXVIII.	,, CRYPTOPYRRHUS		,,	335

GEOCICHLA VARIA (*Pall.*).

WHITE'S GROUND-THRUSH.

Turdus varius, Pallas, Zoogr. Rosso-Asiat. i. p. 449 (1811).
Turdus aureus, Holandre, Ann. de Verron. 1825, p. 310.
Turdus squamatus, Boie, Isis, 1835, p. 251.
Turdus whitei, Eyton, Rarer Brit. B. p. 92 (1836).
Oreocincla whitei, Gould, P. Z. S. 1837, p. 136.
Oreocincla varia, Gould, P. Z. S. 1837, p. 136.
Oreocincla aurea, Bp. Cat. Ucc. Eur. p. 34, no. 136 (1842).
Turdus lunulatus (nec Lath.), Blasius, List B. Eur. p. 9 (1862).
Oreocincla hancii, Swinh. Ibis, 1863, p. 275.
Turdus dauma (nec Lath.), Pelz. Verh. zool.-bot. Gesellsch. Wien, xxi. p. 703 (1871).
Geocichla varia, Seebohm, Cat. Birds Brit. Mus. v. p. 151 (1881).
Geocichla hancii, Seebohm, t. c. p. 153 (1881).
Oreocichla varia, Sharpe, Handb. B. Great Brit. ii. p. 243 (1894).

G. suprà olivaceo-brunnea, nigro lunulata: pileo notæoque ochrascenti-flavo variegatis: rectricibus 14; remige 2ª quam 5ª longiore: alâ 168–180 millim.

White's Thrush, as it is familiarly called by English naturalists, was discovered in the middle of the last century by Johann Georg Gmelin near Krasnoyarsk in Central Siberia, and about the same time by Georg Wilhelm Steller in the valley of the Bargusin River, which flows into Lake Baikal. The species, however, was not named until the publication of Pallas's great work on the zoology of Asiatic Russia, when he bestowed on it the name of *Turdus varius* (Zoogr. Rosso-Asiat. i. p. 449). J. G. Gmelin passed through Krasnoyarsk in January 1735, when White's Thrush must have been far away to the south in its winter-quarters; but on his return journey, in 1740, he revisited the "city of the red hills" about the middle of August, when he probably procured the specimens from which Pallas took his descriptions.

Neither Pallas himself, nor his worthy followers in Siberian exploration, Middendorff or Schrenck, obtained this species, but more recently it has been recorded from various districts of Siberia. In 1856 three examples were procured late in April and early in May in the kitchen-garden of a post-house at Tarei-nor in the Kerbon Steppe, south of Nerchinsk, not far from the breeding-grounds of Pallas's Sand-Grouse (Radde, Reis. im Süden von Ost-Sibirien, ii. p. 231). In the spring of 1873 examples were again procured in the same district by Dr. Dybowski (Tacz. J. f. O. 1874, p. 335).

Fifteen degrees further west Dr. Dybowski found it not uncommon during the last half of May in the valley of the Selenga River, on the south-western extremity of Lake Baikal, between Irkutsk and Kiachta (Tacz. J. f. O. 1872, p. 436), but he did not find it breeding nor did he observe it on the autumn migration. His travelling companion Victor Godlewski states, however, that it was seen in September on the autumn migration (Tacz. Faune Orn. Sibérie Orient. p. 282).

The range of White's Thrush extends eastwards as far as the Pacific. It has been procured at the end of April near Lake Hanka in the valley of the Ussuri, and a dead specimen was found in the Northern Alashan Desert in Southern Mongolia (Prjevalski, in Rowley's Orn. Misc. ii. p. 200).

White's Thrush has only once occurred on Yezzo, but is brought in considerable numbers to the winter market in Yokohama (Seebohm, Birds Jap. Emp. p. 43), and may possibly breed on the volcano of Fuji-yama, as it is said to have been once shot there in June (Blakiston and Pryer, Ibis, 1878, p. 241), but it was not found in that locality by Jouy's expedition. Mr. Ringer has forwarded examples from Nagasaki, from which place it was sent to Europe at least as long ago as 1840 (Temminck, Man. d'Orn. iv. p. 604). Jean Kalinowski procured a pair in the spring of 1887 near Sëoul, the capital of Korea (Tacz. P. Z. S. 1887, p. 602).

It passes through North China on migration in spring and autumn (David et Oustalet, Ois. Chine, p. 158), and the remains of an example which had probably been killed by a hawk were found in a tomb-grove between Takoo and Pekin in September 1860 and were recorded under the name of *Oreocincla whitei* by Swinhoe (Ibis, 1861, p. 333). An example was procured on Lighthouse Island, near Chefoo, on the 6th of October (Swinhoe, Ibis, 1874, p. 445). The nest of the present species is said to have been found in May 1872 at Ningpo, to the south of the delta of the Yangtze-Kiang, but the evidence is not altogether satisfactory.

White's Thrush winters in Southern China, and is recorded, under the name of *Oreocincla aurea*, by Swinhoe (Ibis, 1860, p. 56) as a straggling visitant to Amoy, a male bird, now in my collection, having been obtained by him on the 7th of March, 1859, and a second specimen observed, while a third was procured in March 1866.

It is probable that the species also winters in Formosa, where an example was obtained on the Camphor Hills, in the north of the island, on the 20th of March, 1862, and described as a distinct species under the name of *Oreocincla hancii* by Swinhoe (Ibis, 1863, p. 275). A second example was procured by him on the 15th of March, 1864 (Ibis, 1866, p. 304), and I have examined a third in the Paris Museum.

The Formosan birds are undoubtedly much less ochraceous than Japanese skins, but as they are in spring plumage (the type is dated March 20th), and most of the Japanese specimens are in autumn plumage, the difference is probably one of season rather than of race. This opinion was also entertained by Swinhoe, who afterwards regarded *O. hancii* as identical with *O. varia* (P. Z. S. 1871, p. 368); and though, in 1881, I treated the Formosan bird as a distinct species under the name of *Geocichla hancii* (Cat. Birds Brit. Mus. v. p. 153), the large series which has since passed through my hands has led me to believe that Swinhoe was right in suppressing the name.

Further to the south the species winters in the Philippine Islands (Tweeddale, P. Z. S. 1878, p. 429), probably only in the high mountains, as Mr. John Whitehead has met with it in the high-lands of Luzon (Ogilvie Grant, Ibis, 1895, p. 445).

There is also a specimen in the British Museum from Pegu, where it was procured by Major Wardlaw Ramsay on the 17th of January (Oates, Faun. Brit. Ind., Birds, ii. p. 153). There is, however, no evidence that White's Thrush has ever occurred further west on migration in any part of the Indian Peninsula, the specimens referred to the present species by Blyth, Jerdon, Hodgson, and others having turned out to be *G. dauma* or *G. nilgiriensis*.

It is not known that White's Thrush breeds west of the valley of the Yenesei. According to Professor Slowzow, of Tynmen, it is a rare straggler to the district north of Omsk and common in the district south of that town (Menzbier, Ibis, 1893, p. 372); but if this be the case it is rather remarkable that there is not an example in Professor Slowzow's Museum. A single example has been procured to the south of Omsk and has been identified by Dr. Menzbier. Three examples have been obtained in East Russia—one of them in July 1887 near Slatoust on the Ural Mountains south of Ekaterinburg, and two of them (August 1891 and August 1892) near Perm; but no mention is made of this species in Sabanäeff's 'Avifauna of the Ural' or in Bogdanow's 'Birds of the Volga.'

To various parts of Europe White's Thrush comes as an accidental visitor. There are four

records of the occurrence of this species in Scandinavia and the basin of the Baltic. As long ago as 1849 the Königsberg Museum possessed an example which was shot at Elbing, on the southern shores of the Gulf of Dantzig (Homeyer, Rhea, ii. p. 145), and in the same museum there are the remains of an example killed in 1879 in the same district (Hartert, Ibis, 1892, p. 358). In the Stockholm Museum there is a still older example, which was killed in November 1837 in the province of Jemtland in Central Sweden (Sundevall, K. Svensk. Vetensk.-Akad. Forh. 1840, p. 36); and recently an example was procured in October 1879 in the south-west of Norway, in the Ryfylke District, north-east of Stavanger, in the museum of which town it has been placed (Collett, Vid. Selsk. Christiania Forh. 1881, part 10, p. 1).

There are two records of the occurrence of White's Thrush in the basin of the Danube. The earliest refers to an example which was bought in the flesh in the Vienna bird-market about half a century ago, and was in the Museum of Prince Richard von Khevenhulle-Metsch at Ladendorf, four hours' journey from Vienna (Dr. J. R. S., Isis, 1845, p. 564). A second example is in the Vienna Museum and was bought from a dealer in 1847 as having come from Aspang to the south of Vienna, and was recorded under the name of *Turdus dauma* (Pelzeln, Verh. zool.-bot. Gesellsch. Wien, 1871, p. 703).

There are eight records of the occurrence of this species in Italy and the Transalpine Tyrol. The first example was caught on the 7th of October, 1854, near Borgo, in the Val Sugana east of Trient, and was placed in the Museum at Roveredo (Unterstainer, Comm. Fauna etc. Verr. et Trent. p. 252). The second was caught in 1861 in the same district, at Arco on the Lago di Garda (Althammer, Rev. et Mag. de Zool. 1861, p. 553). The third was bought in the winter of 1863 in the bird-market of Genoa, and is now in the Turati collection in the Milan Museum (Salvadori, Cat. Ucc. Sardegna, p. 26). The fourth was procured on the 17th of October, 1870, near Genoa, and is now in the Civic Museum of that city (Salvadori, Faun. Ital., Uccelli, p. 78). The fifth was shot on the 14th of October, 1873, at Poggio Scali in the Tuscan Apennines, and is now in the Florence Museum; and the sixth, which was also shot in the autumn of 1873, near Rome, is now in the University Museum of that city (Giglioli, Ibis, 1881, p. 197). The seventh example was procured in the autumn of 1885 on the Island of Elba (Giglioli, Avifauna Italica, i. p. 186); and the eighth on the 8th November in the Siena District (Brogi, Revista Italiana, 1889, p. 272).

Eleven examples have been recorded from Belgium and the valley of the Rhine. The earliest (and, so far as is known, the first record of the species in Europe) is that of an example in the Metz Museum, which was caught in the woods of Rezonville in September 1788, and was described as a new species under the name of *Turdus aureus* by Holandre (Ann. Verronaire, 1825, p. 310). The examples recorded in 1840 as having been caught on the Rhine and in Germany (Temminck, Man. d'Orn. iv. p. 604) may possibly refer to birds sent from Heligoland, and being without exact date or locality may be passed by as of no scientific value.

The second authenticated individual was caught on the 17th of October, 1842, in the forest of Dron-le-Mont, and was placed in the cabinet of Baron de Selys-Longchamps; the third was bought about the year 1846 by Monsieur C. F. Dubois in a collection of Belgian birds, which were unfortunately without exact localities or dates; the fourth was discovered in the year 1854 by the last-named ornithologist in the Museum at Grez belonging to the Prince de Looz, whose curator assured him that it had been procured at Namur (Dubois, J. f. O. 1856, p. 239). The fifth was caught in October 1855 near Louvain and came into the possession of Monsieur Bovie; and the sixth was shot about the same date near Jemappes and sold to M. Denison (Dubois, J. f. O. 1856, p. 505). A seventh specimen was obtained on the 28th of September, 1864, at Bereren near Antwerp (Croegaert, Bull. Mus. Roy. Belg. 1888, p. 106). The eighth was shot, in October 1870, near Termonde (Alph. Dubois, Faun. Ill. Vertébr. Belgique, Ois. p. 271), and a ninth specimen was

procured, late in November 1874, at Hardtburg near Düsseldorf (Dresser, B. Eur. ii. p. 78); while a tenth example is in the Museum of the Forstakadamie at Eberswald, between Berlin and Stettin, and is said to have been caught near Cologne (Altum, J. f. O. 1879, p. 216). Lastly, another specimen was obtained at Bereren, near Antwerp, on the 13th of October, 1885 (Croegaert, *loc. cit.*).

There are four records of the occurrence of White's Thrush in France. The first recorded example is in the Museum at Marseilles, and was caught near that city in October 1840 (Jaubert et Barthélemy-Lapommeraye, Rich. Orn. p. 202). The second example is in the Museum of Bayonne, and was caught near that town in 1871; and the third is in the Museum of Caen, and was captured on the coast between Caen and Bayeux in September 1872; whilst the fourth is in the collection of Monsieur Bernard at Le Mans in the department of Sarthe, and was shot on the 10th of December, 1875 (Vian, Bull. Soc. Zool. France, 1880, p. 215).

A dozen or more examples of White's Thrush have been taken on the little island rock of Heligoland, and at least half a dozen others have been seen, but not procured. One was caught in September 1834 and described as a new species under the name of *Turdus squamatus* (Boie, Isis, 1835, p. 251), and several other examples were sent by Koopmann and Reymers, the Heligoland bird-stuffers, to Brandt of Hamburg between 1825 and 1840, most of them having been shot in October. Since that date our information respecting the occurrence of rare birds on Heligoland has been more precise, various communications from the pen of the resident ornithologist Heinrich Gätke having appeared in the 'Journal für Ornithologie,' the 'Ibis,' and other periodicals, where the visits of various ornithologists to Heligoland have been recorded. The earliest of these mentions White's Thrush amongst the species in Gätke's collection (Blasius, Naumannia, 1858, p. 310), and a translation of this interesting article appeared in the 'Ibis' four years later (Ibis, 1862, p. 58); but during the last twenty years Gätke's case of White's Thrushes has been several times described (Cordeaux, Ibis, 1875, p. 177). It contains five perfect examples (Seebohm, Ibis, 1877, p. 164), and excites the admiration of every visitor to the island (Selys-Longchamps, Bull. Soc. Zool. France, 1882, p. 271). Finally, in 1891, Gätke's long-expected book on the birds of this curious island was published, and the scattered details were collected together in his work 'Die Vogelwarte Helgoland,' and the following exact dates of the occurrence of White's Thrush on the island may be accepted as accurate:—An example on the 3rd of September, 1846; a male on the 3rd of October, 1849; a female on the 4th of October, 1864; a male in very abraded plumage on the 23rd of April, 1869; a specimen on the 1st of October, 1869, and a female on the 16th of the same month; a specimen on the 18th of September, 1870; a male on the 9th of October, 1872; and a female on the 3rd of October, 1884. It is interesting to note that in all these cases the occurrence has been in September or October, with only one exception.

There are at least a score of records of the occurrence of White's Thrush in the British Islands, but only one of them refers to a Scotch example, which was killed at Hardacres, in Berwickshire, during the last week of September 1878 (Brotherston, Zoologist, 1879, pp. 133, 177).

The species has occurred three times in Ireland. One example was shot, in December 1842, in the county of Cork (Thompson, Natural History of Ireland, Birds, i. p. 128); a second was shot, in the spring of 1867, in County Longford (Blake-Knox, Zoologist, 1870, pp. 2019, 2060); and a third was killed on the 9th of January, 1885, at Westport in County Mayo (More, Zoologist, 1885, p. 111).

It is not known to have occurred in Wales, but there are many English records. The earliest is that of an example which was shot at Heron Court near Christchurch in Hampshire, and was described as a new species in 1836, under the name of *Turdus whitei*, by the late T. C. Eyton (Rarer British Birds, p. 92). Other occurrences on the south coast are an example killed in January 1881 near Ashburton in Devonshire, said to be one of a flock of four or five of apparently the same species (Holdsworth, P. Z. S. 1881, p. 260); an example killed in January 1874 in the parish of

Probus in Cornwall (Rodd, Zoologist, 1874, p. 3880); and another killed in December 1886 at Tresco in the Scilly Islands (Cornish, Zoologist, 1887, p. 114). There are three records from the valley of the Severn: the first on the 26th of January, 1859, near Stratford-on-Avon (Tomes, Ibis, 1859, p. 379); the second in January 1870 near Taunton in Somersetshire (Cecil Smith, Zoologist, 1870, p. 2018); and the third on the 6th of January, 1871, near Langsford in the same county (Cecil Smith, Zoologist, 1871, p. 2607). One example has occurred in Norfolk, on the 10th of October, 1871, near Hickling (Gunn, Zoologist, 1871, p. 2848); one in Suffolk in 1881, at Moulton, near Newmarket (Babington, Birds of Suffolk, p. 249); and one in Durham, on the 17th of January, 1872 (Hancock, Birds of Northumberland and Durham, p. 64).

White's Thrush has occurred no less than five times in Yorkshire. An example said to have been shot at Almondbury Bank near Huddersfield was exhibited on the 14th of October, 1864 (Beaumont, Naturalist, 1865, p. 217). A second example was seen, but not procured, early in 1870, at Danby in Cleveland (Atkinson, Zoologist, 1870, p. 2142). A third killed itself by flying against a telegraph-wire near Whitby in November 1878 (Simpson, Zoologist, 1880, p. 68). A fourth was shot at Rimswell near Withernsea in November 1881 (Clarke and Roebuck, Zoologist, 1884, p. 174). A fifth was obtained at Waplington Manor near Pocklington in January 1882 (Backhouse, Zoologist, 1882, p. 74).

There are several other records of the occurrence of White's Thrush in England, but some of them rest upon more or less doubtful evidence. I have several times met with examples of one or other of the Australian Ground-Thrushes in collections where they were doing duty as White's Thrush, but by far the greater number of British occurrences above quoted may be accepted without doubt.

The example shot in the winter of 1859 near Stratford-on-Avon, and recorded by Mr. Tomes, frequented a dry leafy ditch in a small grass inclosure thickly surrounded by elms, and was busy turning over the dead leaves, doubtless in search of food. Its flight was very undulating, like that of the Green Woodpecker, and low, the bird often settling on the ground and only making choice of a tree when it happened to pass under one, into which it rose almost vertically. It appeared to be almost entirely a ground-feeder, and was not seen to take any notice of the ivy- or hawthorn-berries, on which Blackbirds and other Thrushes were feeding at the time.

Dr. Dybowski, describing its habits in the valley of the Selenga River, remarks that it is shy and difficult to shoot, and that its song is quite different to that of the Song-Thrush. He describes its call-note on migration as an original but melodious whistle.

Blakiston and Pryer, describing the habits of White's Thrush in Japan, where it is probably only a winter visitor, say that it has no song, only a single penetrating note, like the plaintive whistle of a Bullfinch, which can be heard for a long distance; and that, though the bird is very shy, it can easily be attracted by imitating its note.

A nest and eggs were procured by Swinhoe in May 1872 at Ningpo in China, and were figured by him in the late Mr. Dawson Rowley's 'Ornithological Miscellany' (ii. p. 256, pl. lxi.); but the nest was not absolutely identified as that of White's Thrush, as the parent birds were not procured, and it is possible that some mistake took place in the identification.

Geocichla varia is the largest species of the sub-genus *Oreocincla*, but there is not much difference in size between the smallest examples of the Siberian species and the largest examples of the Himalayan *G. dauma*. These two species resemble each other closely in colour, and the variations attributable to age and season appear to be exactly the same in both. The general colour of the upper parts of the adults in spring plumage is olive-brown rather than russet-brown, a character only to be found elsewhere in the sub-genus in *Geocichla lunulata*, *G. cuneata*, and

G. imbricata. The Siberian and Himalayan species also resemble each other in having the pale sub-terminal bars across the small feathers of the upper parts, especially those of the crown, buff, and consequently much more conspicuous than in *Geocichla horsfieldi*, *G. nilgiriensis*, *G. papuensis*, *G. macrorhyncha*, or *G. imbricata*, in which they are much darker and chiefly confined to the crown, or than in *G. heinii*, *G. cuneata*, or *G. lunulata*, in which they are nearly obsolete. The Siberian and Himalayan species further resemble each other, and differ from all the other species of the sub-genus *Oreocincla*, in having the attenuations of the outer webs of the primaries confined to the third, fourth, and fifth quills, instead of extending to the sixth also. In both species the tail is moderately short, less than four-fifths of the length of the wing [distinguishing them from *Geocichla lunulata*, *G. cuneata*, and *G. macrorhyncha*], and the white on the outermost tail-feathers extends for less than half an inch from the tip [distinguishing them from *G. cuneata*, *G. papuensis*, and *G. heinii*]; nevertheless *Geocichla varia* has fourteen rectrices, whilst *Geocichla dauma* has only twelve.

Geocichla varia further differs from *Geocichla dauma*, as well as from all the other species of the Oreocincline group, in its wing-formula. As might be expected in a species whose range of migration is so much greater than that of any of its allies, it has a more pointed wing.

Second primary intermediate in length between fourth and fifth; outer tail-feathers 0·3 inch shorter than longest. First primary shorter than the primary-coverts.

Length of wing 6·6 to 5·9 inches, tail 4·6 to 4·15, culmen 1·3 to 1·1, tarsus 1·45 to 1·3.

The sexes appear to be alike in colour. Adults in autumn plumage, immediately after the annual moult, are somewhat more ochraceous (*i. e.* less olive) than birds in spring plumage—the most ochraceous examples, with sub-terminal bars of this colour across the feathers of the underparts, being supposed to be birds of the year. Young in first plumage are unknown.

Geocichla varia further resembles *Geocichla dauma* in the supplementary characters which are more or less common to all the species of the sub-genus *Oreocincla*. The pale spots at the tips of the greater and median wing-coverts are fan-shaped, and, together with the pale patches on the outer webs of the primary-coverts, are golden buff in newly moulted birds, fading to pale olive-grey in abraded summer plumage. The black on the coverts and on the tail-feathers is well developed, and all the tail-feathers except the four central ones are narrowly tipped with white. The pale patch on the inner webs of the quills is generally buff, but in very exceptional cases, probably those of fully-adult birds, it is nearly or quite white.

The following plates are also worthy of note:—

Gould, 'Birds of Great Britain,' ii. pl. 39. A single figure of the size of life. It is too ochraceous in colour, with the bill too slender and the tarsus too short.

Dresser, 'Birds of Europe,' ii. pl. 10. A single figure by Keulemans, three-quarters of life-size, with the bill much too stout.

Lilford, 'Coloured Figures of the Birds of the British Islands,' pt. iii. pl. 1. A single figure of half life-size, drawn by Keulemans, and produced by chromo-lithography, is too ochraceous in colour.

Sundevall, 'Svenska Foglarna,' pl. lxvii. A small figure of a young bird, with sub-terminal ochreous spots across the feathers of the underparts, and drawn with a *scutellated* tarsus!

Jaubert et Barthélemy-Lapommeraye, 'Richesses Ornithologiques du Midi de la France,' pl. xiii. fig. 1. A very slight figure, much less than life-size, and not olive enough in colour.

Dubois, 'Faune illustrée des Vertébrés de la Belgique, Les Oiseaux,' i. pl. 60. A bad figure, too flat on the crown, and with the sub-terminal pale spots on the feathers of the upper parts much too obscure.

Gould, 'Birds of Europe,' ii. pl. 81. This figure is said to have been drawn from an example

obtained in Hamburg in the flesh. It is a very bad representation of the species, being much too russet in colour (not olive enough), and with the sub-terminal pale spots on the feathers of the upper parts scarcely more emphasized than they are in the Australian representatives of the species.

It is not to be wondered at that so handsome a bird should have been frequently figured. Keulemans has been very successful with our Plate. The left-hand figure is life-sized, and is drawn from a male in the Swinhoe collection, shot at Amoy on the 7th of March, 1859; whilst the smaller and more distant figure to the right is a greyer and apparently more abraded example, also a male, shot on the 20th of March, 1862, on the Camphor Hills in the Island of Formosa. It is the type of *Oreocincla hancii* of Swinhoe, a species which I now consider to be inseparable from *Geocichla varia*.

GEOCICHLA DAUMA (*Lath.*).

THE SMALL-BILLED GROUND-THRUSH.

Dauma Thrush, Lath. Gen. Syn. Suppl. i. p. 145 (1790).
Turdus dauma, Lath. Ind. Orn. i. p. 362 (1790).
Oreocincla parvirostris, Gould, P. Z. S. 1837, p. 136.
Turdus varius (nec Pall.), Jerd. Madr. Journ. x. p. 254 (1839).
Turdus whitei (nec Eyton), Blyth, Ann. Nat. Hist. xii. p. 98 (1843).
Oreocincla dauma, Blyth, J. A. S. Beng. xvi. p. 142 (1847).
Geocichla dauma, Seebohm, Cat. Birds Brit. Mus. v. p. 154 (1881).

G. suprà olivaceo-brunnea, nigro lunulata: pileo notæoque ochrascenti-fulvo variegatis: rectricibus 12: remigibus 3, 4, et 5 (minime 6) indentatis: alâ 152–134 millim.

This Ground-Thrush breeds on the hill-ranges of the Himalayas, up to 7000 feet, from Huzara and Kashmir to Assam and the Burmese hills. In the cold season it visits the plains, and has been found in Behar and other portions of Bengal, Chutia Nagpur (Ball, Str. F. ii. p. 408, 1874), and Orissa (Ball, Str. F. vii. p. 213, 1878), while Jerdon records it from Central India, as far south as the Wynaad (B. Ind. i. p. 532); but I expect that the bird here intended is really *G. nilgiriensis*. It is found in Upper Pegu, and is probably a cold-weather visitant to all portions of the Indo-Burmese countries (Oates, B. Burm. i. p. 6). Major Wardlaw Ramsay met with the species in the Karen Hills at 5000 feet in April (Ibis, 1877, p. 462).

The alleged occurrence of *G. dauma* on the island of Heligoland (Gätke, Vogelwarte Helgoland, p. 245) is an error. The specimen in question is in the Museum of Lund, and was originally bought about the year 1836 from the dealer Brandt in Hamburg by Baron von Gyllenkrog, and after his death it became the property of the Lund Museum. Brandt sold it as having been shot on the island of Fühnen or Fyen, south-east of Jutland, but Gätke maintains that it came from Heligoland. I have carefully examined this specimen, and that it originally came from North-east Australia is certain enough, but whether it was brought from the Antipodes by an enterprising sea-captain, or found its way by easy stages halfway round the world to a Danish seaport, it were idle to guess. There can be no doubt as to what the species is, viz. *Geocichla heinii* of Cabanis, and *G. iodura* of Gould. The type of *G. heinii* is in the Museum of Oberamtmann Ferdinand Heine at Halberstadt, who purchased it of a dealer (probably the same Brandt of Hamburg) as having come from Japan!

The statements that *G. dauma* has occurred near Vienna (Pelzeln, Verh. zool.-bot. Gesellsch. Wien, 1871, p. 703) and in Italy (Giglioli, Avifauna Italica, 1886, p. 103) cannot be regarded as supported by satisfactory evidence.

The Zoological Society of London possesses a valuable manuscript work on Indian ornithology, written nearly half a century ago, by Colonel Tickell, and illustrated by original water-colour drawings. This work contains some interesting particulars respecting the habits of this Ground-Thrush. Colonel Tickell met with the species in its breeding-grounds near Darjiling, 5000 feet above sea-level, but it was presumably near the end of its summer stay on the hills, as he states

that he never heard it utter a note. He also met with it during the cold season in the low forest-regions of Singbhoom in Western Bengal, where he appears to have had a better opportunity of watching its habits. Although it prefers swampy ground, such as is found covered over with thick bushes near deserted tanks, or marshy ravines in the jungle overgrown with bamboos and underwood, it is nevertheless also found in dry stony Saul jungle. In its habits it appears to resemble its congeners. It perches low and keeps much to the ground, hunting amongst the dead leaves for earthworms, slugs, leeches, &c. When approached, it flies off swiftly, keeping near the ground, and seeks some dense covert, where it remains motionless and silent. The birds are generally found singly, but sometimes three or four may be seen together near the thickets and dense underwood, and, when disturbed, they fly off to different places of concealment.

During the cold season, when it lives in the plains, it occasionally finds its way to the gardens, where it is recorded as very wary, feeding under the bushes, and, when disturbed, flying up into the mango-trees (Beavan, Ibis, 1870, p. 327).

It is probably a partial migrant on all the hill-ranges within the area of its distribution, descending to the adjoining plains in the cold season (Oates, Fauna of British India, Birds, ii. p. 152).

Sir V. Ball invariably found it on the banks of well-wooded streams, and remarks that its flight was low and irregular. Mr. Oates says that it feeds on the ground, and Jerdon makes the same remark, adding that it devours fruit and seeds. It is said to have a pleasant song, not unlike that of *Turdulus wardi* (G. F. L. Marshall, in Oates's edition of Hume's 'Nests and Eggs of Indian Birds,' ii. p. 107).

It breeds in May and June, laying two or three eggs in a nest built rather substantially of moss, neatly lined with stalks of maiden-hair fern and a few bents of grass. The nest has been found in the fork of a moss-covered rhododendron, twenty feet from the ground (*G. F. L. Marshall*).

The eggs are very similar to those of the Common Blackbird, and vary in colour, size, and shape to the same extent. An egg in the British Museum, obtained by Mr. W. E. Brooks at Gulmurg in Kashmir on the 6th of June, 1871, measures 1·28 by ·91 inch. The pale greenish-blue ground-colour is almost entirely hidden by the reddish-brown markings (Brooks, Stray Feathers, iii. p. 237).

Geocichla dauma exactly resembles *G. varia* in all the various details of its plumage so far as colour is concerned, but it differs from its Siberian ally in the following particulars:—

Instead of four, there are only three very dark feathers on each side of the four paler brown feathers in the centre of the tail, so that the total number of rectrices, instead of being 14, is only 12.

Instead of having the second primary intermediate in length between the fourth and fifth, this is intermediate between the fifth and sixth, so that the wing is slightly more rounded, as might be expected in a species whose range of migration is so much more restricted.

It is also, on an average, a smaller bird than *O. varia*. Length of wing 6·0 to 5·3 inches, tail 4·4 to 3·6 inches, culmen 1·1 to 1·0 inch, tarsus 1·32 to 1·2 inch. Outer tail-feathers 0·3 inch shorter than the longest. First primary shorter than the primary-coverts.

In what I take to be the bird of the year, the ground-colour is much more ochraceous than in the adults, and the bastard-primary is almost as long as the longest primary-covert. In abraded summer plumage the ground-colour is much less ochraceous. In a very young bird in the British Museum most of the first plumage is retained; the black lunulations are almost obsolete on the rump and upper tail-coverts; the under tail-coverts and the breast are very buff, but the bastard-primary is shorter than the primary-coverts.

The amount of white at the tips of the tail-feathers varies more than usual in this species, in some examples extending for nearly an inch on the inner web of the outer feathers, and in others being almost obsolete.

The Geocichline patches on the under surface of the wing are nearly always buff, but there are two examples in the British Museum in which they are white: it is probable that these are in the fully adult plumage. So far as is known, these Geocichline patches are always white in *Geocichla nilgiriensis* and *G. heinii*, and nearly always buff in the other species of the sub-genus *Oreocincla*.

There is an example in the British Museum, dated the 27th of September, in which some of the quills are still "in the pen."

The specific characters of *Geocichla dauma* may be summed up as follows:—

I. General colour of upper parts olive-brown, and of underparts white (more or less suffused both above and below with golden buff in autumn, especially in the first autumn); nearly all the body-feathers, both above and below, ornamented with black crescentic tips [distinguishing it from every species belonging to the genera and sub-genera *Zoothera*, *Psophocichla*, *Cichlopasser*, *Turdulus*, and *Geocichla*, but not from those belonging to the sub-genus *Oreocincla*].

II. Rectrices twelve in number [distinguishing it from *G. varia* and *G. horsfieldi*].

III. Rump and upper tail-coverts, in summer, olive-brown (not russet-brown), lunulated with black [distinguishing it at that season from *G. horsfieldi*, *G. nilgiriensis*, *G. papuensis*, *G. heinii*, and *G. macrorhyncha*].

IV. Feathers of crown and nape crossed with very conspicuous pale sub-terminal bars varying in colour from nearly white in adult summer plumage to golden buff in first autumn dress [distinguishing it from every other species of the sub-genus *Oreocincla*, except *G. varia*].

V. White terminal patch on inner web of outermost tail-feathers generally less than half an inch long [generally distinguishing it from *G. heinii*, *G. cuneata*, and *G. papuensis*].

VI. Tail moderate in length, less than four-fifths of the length of the wing [distinguishing it from *G. macrorhyncha*, *G. lunulata*, and *G. cuneata*].

VII. Bill comparatively small, the culmen less than a third of the length of the tail [distinguishing it from adult examples of *G. nilgiriensis* and *G. imbricata*].

The following combinations are diagnostic within the sub-genus:—I., II., IV.; I., II., III., VI., VII.; I., II., V., VI., VII.

A figure of this species has apparently never been published before, but there are various sketches in the Hodgson portfolios in the British Museum (Gray, Catalogue of the Specimens and Drawings of Mammalia and Birds of Nepal and Thibet presented by B H. Hodgson, Esq., p. 80). In the first edition of that 'Catalogue,' published in 1846, Gray called the bird *Turdus whitei*, but in the second edition, published in 1863, the name is corrected to *Oreocincla dauma*.

The right-hand figure in the Plate is a life-sized representation of an example in my museum procured in 1877 in Sikhim by the collectors of that indefatigable ornithologist, the late Mr. L. Mandelli, of Darjeeling. The smaller figure in the distance, to the left, is taken from a skin shot by Mr. A. Anderson on the 5th of May, 1895, in Kumaon; it is a male in the somewhat faded summer plumage, which has been described as *Oreocincla parvirostris*.

GEOCICHLA NILGIRIENSIS (*Blyth*).

NILGIRI GROUND-THRUSH.

Turdus varius (nec Pall.), Jerd. Madr. Journ. xiii. p. 168 (1844).
Oreocincla neilgherriensis, Blyth, J. A. S. Beng. xvi. p. 141 (1847).
Turdus nilgiriensis, Gray, Hand-l. B. i. p. 254, no. 3692 (1869).
Geocichla nilgiriensis, Seebohm, Cat. Birds Brit. Mus. v. p. 157 (1881).
Oreocincla nilghiriensis, Oates, Faun. Brit. Ind., Birds, ii. p. 153 (1890).

G. suprà rufescenti-brunnea, nigro lunulata: pileo ochraceo variegato: rectricibus 12, maculis terminalibus albis inconspicuis, haud 25 millim.: cauda 94–84 millim.

The present species is an inhabitant of the hills of Southern India. The late Mr. Davison records it from the higher ranges of the Nilgiris and the Brahmagherries; Capt. Horace Terry found it nesting on the Palani Hills; and Mr. Bourdillon states that in Travancore it frequents the thick jungle from 2000 to 5000 feet above the level of the sea. Its reputed occurrence in Ceylon is doubtless based upon error.

Mr. Davison says that this Thrush is usually seen singly, sometimes in pairs, but is everywhere a rare bird. He describes it as a glorious songster, whose rich and varied song can be heard for nearly a mile. Mr. Rhodes Morgan, on the other hand, says that it appears to have no song, but utters every now and then a single clear warbling note. The same observer says that it may usually be seen on the topmost branch of some large shola-tree late in the evening. According to Mr. Morgan, the species breeds from March to June in the Nilgiris, the nest being very like that of *Merula simillima*, usually containing three eggs, of a pale greenish-blue colour, minutely speckled with rusty brown. Captain Terry likens the eggs to small examples of the Common Jay's, and the nest which he found on the Palanis was built in the fork of a tree about fifteen feet from the ground; it was composed of green moss lined with fine roots, with some fern mixed up in its foundation—a large shallow cup, compactly put together, 3·75 inches across and 1·75 inch deep inside, 6 inches across and 3 inches deep outside. It will be noticed that Mr. Morgan's account of the position of the nest differs from that given by Captain Terry, inasmuch as he states that he found the nest invariably on some low tree from six to eight feet above the ground.

Geocichla nilgiriensis very closely resembles *G. heinii*, but is distinguished from it by several good characters. In the general colour of the upper and under parts there is no difference between the two species: the brown of the upper parts is of the same shade of russet, the black crescentic markings are equally narrow on the rump and upper tail-coverts, the white of the underparts is suffused with buff on the breast to the same extent. These two species are the only ones in the sub-genus *Oreocincla* in which the Geocichline markings on the inner webs of the quills are, so far as is known, always white; in all the other species, except in what are probably fully-adult examples, they are buff.

There is scarcely any difference in the measurements of *Geocichla nilgiriensis* and *Geocichla heinii*, and the wing-formula is almost precisely the same, except that occasionally examples of the Indian species have the second primary slightly shorter than the sixth, and the first primary

not quite so long as the primary-coverts; these are exceptional cases, which are not known to occur in the Australian species. The two species are, however, quite distinct, not only in their geographical ranges, but also in some of the minor details of their coloration. *G. heinii* has more white on the inner web of the outermost tail-feathers (the white tip extending for more than an inch), and *G. nilgiriensis* has very distinct (pale russet-brown) sub-terminal bars across the feathers of the crown. It is impossible to confound either bird with any other species in the sub-genus, though from some extraordinary oversight even this has been done. Probably in consequence of the neglect of ornithologists to distinguish the diagnostic characters of new species from those which they have in common with their allies, and from the difficulty of obtaining examples for comparison, *Geocichla nilgiriensis* has been identified with *G. dauma*, and *G. heinii* with *G. lunulata*, in a "Notice sur les Merles du genre Oréocincle" by Dr. Vian (Bulletin de la Société Zoologique de France, 1880, pp. 217, 220).

Geocichla nilgiriensis appears to be always a smaller bird than *G. varia*, and generally than *G. horsfieldi* and *G. dauma*. It varies in length of wing from 5·3 to 4·8 inches, tail 3·7 to 3·3 inches, culmen 1·3 to 1·0 inch, tarsus 1·2 to 1·1 inch. Outer tail-feathers nearly as long as the longest. First primary sometimes shorter, but generally longer than the primary-coverts; second primary sometimes longer, sometimes shorter than the sixth.

There is an example in the British Museum which retains remains of the first plumage. It has pale shaft-streaks on the crown, the culmen measures only 1 inch, the black lunulations are almost obsolete on the rump and upper tail-coverts, and are less crescent-shaped than is usual elsewhere; the under tail-coverts are buff, but the Geocichline markings on the under surface of the wing are white, as in the adult.

The amount of white on the tips of the inner webs of the outer tail-feathers varies from rather more to rather less than half an inch [distinguishing it from *Geocichla papuensis*, *G. cuneata*, and *G. heinii*, which have more white on the tail, and from *G. imbricata*, which has none at all]. The tail is less than four-fifths of the length of the wing [distinguishing it from *Geocichla lunulata*, *G. cuneata*, and *G. macrorhyncha*], and consists of only twelve rectrices [distinguishing it from *G. varia* and *G. horsfieldi*].

Compared with *Geocichla dauma* it is smaller in size, with a proportionately larger bill; the brown of the upper parts, especially of the rump and upper tail-coverts, is more russet (less olive); and the sub-terminal bars across the feathers, especially those of the crown, are darker and consequently much less conspicuous.

In its supplementary characters it has some trifling peculiarities. The pale spots on the median and greater wing-coverts are semi-lunar rather than fan-shaped; the buff on the central part of the outer web of the primary-coverts is reduced to a narrow marginal line, which fades into brown.

The figure of the adult on the Plate is drawn from an example sent by Blyth to the British Museum; that of the young bird is drawn from a specimen shot at Ootacamund in the Nilgiris by Major Wardlaw Ramsay, and is also in the British Museum.

GEOCICHLA IMBRICATA (*Layard*).

CEYLON GROUND-THRUSH.

Zoothera imbricata, Layard, Ann. & Mag. Nat. Hist. xiii. p. 212 (1854).
Oreocincla nilghiriensis (nec Blyth), Jerd. Ibis, 1872, p. 139; Holdsw. P. Z. S. 1872, p. 446.
Oreocincla imbricata, Hume, Str. F. i. p. 437 (1873); Legge, B. Ceylon, p. 455, pl. xix. fig. 2 (1879); Oates, Faun. Brit. Ind., Birds, ii. p. 154 (1890).
Oreocincla gregoriana, Nevil, Str. F. i. p. 437 (1873).
Geocichla imbricata, Seebohm, Cat. Birds Brit. Mus. v. p. 159 (1881).

G. suprà olivascenti-brunnea, nigro lunulata: subtùs ochraceo-rufescens, nigro lunulata: rectricibus lateralibus minimè albo terminatis.

The present species, which might well be called the Buff-breasted Ground-Thrush, was first described by Mr. E. L. Layard in 1854, and the type is now in the British Museum. It is really one of the most distinct of the Oreocincline group of Thrushes, and no one comparing the two birds could confound it with *G. nilgiriensis*, though this has been done by Jerdon and other writers, doubtless from lack of specimens for comparison. In 1873, Mr. Hugh Nevil proposed the name of *Oreocincla gregoriana* for what appeared to him to be an undescribed species; but Mr. A. O. Hume pointed out at the time the probable identity of the new species with *G. imbricata* (Layard), and this identification was confirmed by me, in 1881, in the fifth volume of the 'Catalogue of Birds.'

The species is peculiar to Ceylon, and, so far as is known, appears to be confined to the mountain-ranges of the Central Province of that island, where it is found from 3000 to 6000 feet above the level of the sea. It probably breeds in the forests, as it makes its appearance regularly in January and February in the gardens of the coffee-planters.

It is nowhere very common, and is very shy and retiring in its habits, so that but little is known of the latter. It is said to feed almost exclusively on the ground, where it scratches amongst the fallen leaves under the trees in search of insects, and when startled it rises with a loud flutter to seek the nearest cover (Legge, Birds of Ceylon, p. 455).

Nothing has been recorded of the song of this bird, nor is anything known of its nest or eggs.

Geocichla imbricata is in every respect a typical member of the Oreocincline group, though, like *O. nilgiriensis*, it has a Zootherine bill and a comparatively large bastard-primary, which generally extends beyond the primary-coverts. Its most striking peculiarity is that the whole of the underparts are suffused with buff. In the general colour of the upper parts it most closely resembles *G. lunulata*, except that the pale sub-terminal bands across the feathers of the crown are more distinct. In the latter character it exactly resembles *G. nilgiriensis*. It has no white at the tips of the tail-feathers, and the outer rectrices are not more than 2 inches shorter than the longest. The second and sixth primaries are of about the same length. The three penultimate rectrices on each side are much darker than the rest, and the Geocichline markings on the inner webs of the primaries and secondaries are buff.

The measurements are as follows:—Length of wing 4·9 to 4·5 inches, tail 3·3 to 2·75 inches, culmen 1·28 to 1·15 inch, tarsus 1·15 to 1·1 inch.

The pale spots at the tips of the wing-coverts are markedly buff in colour, and those on the greater wing-coverts are semi-lunar rather than fan-shaped. The black on the median wing-coverts and on the tail-feathers is not very pronounced.

The specific characters of *Geocichla imbricata* may be summed up as follows:—

General colour of upper parts olive-brown, and of underparts ochraceous buff, nearly all the body-feathers, both above and below, with black crescentic tips [distinguishing it from every other species belonging to the genus].

These characters are absolutely diagnostic within the genus.

It is further distinguished from *Geocichla varia* and *G. horsfieldi* by having only 12 instead of 14 tail-feathers; from *G. macrorhyncha*, *G. cuneata*, and *G. lunulata* by its short tail; from *G. lunulata*, *G. cuneata*, and *G. heinii* by the presence of pale sub-terminal bars across the feathers of the crown; and from *G. heinii*, *G. cuneata*, and *G. papuensis* by the absence of white on the outer tail-feathers.

Young in first plumage of this species are entirely unknown. All the examples which I have seen are in winter plumage, which probably becomes much abraded and faded before the breeding-season is over. Some examples have the buff of the underparts and on the wing-coverts much richer and darker than others, and may possibly be birds of the year. It is not known that the females differ from the males in colour, but they appear to be on an average slightly smaller in size.

The Plate is taken from an example in my collection obtained in the Hakgala Gardens in the high land near Nuwara Elliya in Ceylon, in February 1876, by Mr. Thwaites, and is life-size. This species has been well figured in Colonel Vincent Legge's 'Birds of Ceylon.'

GEOCICHLA HORSFIELDI (*Bp.*).

HORSFIELD'S GROUND-THRUSH.

Turdus varius (nec Pall.), Horsfield, Trans. Linn. Soc. xiii. p. 149 (1821).
Turdus lunulatus (nec Lath.), Sundev. K. Vet.-Akad. Handl. Stockh. 1840, p. 37.
Oreocincla horsfieldi, Bp. Rev. et Mag. de Zool. 1857, p. 205.
Oreocincla malayana, Sundev. J. f. O. 1857, p. 161.
Turdus malayanus, Gray, Hand-l. Birds, i. p. 254, no. 3688 (1871).
Geocichla horsfieldi, Seebohm, Cat. Birds Brit. Mus. v. p. 153, pl. x. (1881).

G. suprà rufescenti-brunnea, nigro lunulata: rectricibus 14: pileo ochraceo variegato: remige secundâ quintam haud æquante.

The present species is confined to the Island of Java, where it was discovered by Dr. Horsfield early in the present century. In his paper on the "Systematic Arrangement and Description of Birds from the Island of Java," read before the Linnean Society on the 18th of April, 1820, he named this Thrush *Turdus varius*; but whether he gave this name independently, or whether he was aware of Pallas's description of a *Turdus varius*, and identified the Javan with the Siberian bird, is not known. Sundevall subsequently identified the species as *Turdus lunulatus* of Australia, but in his monograph of the genus *Oreocincla*, published in 1869, he recognized the species as distinct and called it *O. malayana*. In the same year Bonaparte also described it as *O. horsfieldi*, and this name has been generally recognized as having priority.

Since Horsfield's time no notes on the habits of the bird have been published, and the species does not occur in Dr. Vordeman's excellent account of the birds of Batavia. Horsfield met with it only in one part of Java, in the thick forests which cover Mount Prahu, a volcanic peak, almost in the centre of the island, which rises 8500 feet above the level of the sea. High up on this mountain (between six and seven thousand feet) it was very abundant and easily caught by the natives, so that in the course of a few days he obtained a great number of specimens; it was feeding on insects and worms. It has been recently obtained by Mr. Doherty in the hills of Lombok, between 3000 and 6000 feet (Hartert, Nov. Zool. iii. p. 555). Mr. A. H. Everett also met with it at Son Karean, in the same island, at 5000 feet (Hartert, *t. c.* p. 593).

Geocichla horsfieldi is a very distinct species, resembling *G. varia* in having fourteen tail-feathers, but differing from its Palæarctic ally in many important points.

It may always be distinguished from *G. varia* by its smaller size. Wing 5·5 to 5·25 inches, tail 4·0 to 3·4 inches, culmen 1·22 to 1·12 inch, tarsus 1·35 inch. Outer tail-feather narrowly tipped with white, and half an inch shorter than the longest.

It may also be distinguished from *G. varia* by its more rounded wing. The second primary is about equal to the sixth, sometimes a trifle shorter, sometimes a trifle longer. In *G. varia* the second primary is almost an inch longer than the sixth, and considerably longer than the fifth.

In colour it is also quite different, being at all times much more of a russet-brown, not so olive-

brown, on the upper parts, and the pale sub-terminal spots or bars are much darker and consequently much less conspicuous, those on the crown being pale russet-brown instead of buff.

Mr. Doherty gives the soft parts as follows:—"Iris dark chestnut; maxilla blackish; mandible grey, ochreous at base; feet pale dirty brownish."

From all the other species in the sub-genus *Oreocincla* it may be distinguished by its extra pair of tail-feathers (14 instead of 12); but as nothing is more common than the loss of two or more tail-feathers, an independent diagnosis is necessary.

The smallness of the white patch at the end of the inner web of the outermost tail-feathers sufficiently distinguishes it from *G. heinii*, *G. papuensis*, and *G. cuneata*, which have much more white, and from *G. imbricata*, which has none at all on the outer rectrices.

The pale russet-brown sub-terminal bars across the feathers of the crown distinguish it from *G. varia* and *G. dauma*, in which they are much paler, and from *G. heinii*, *G. cuneata*, and *G. lunulata*, in which they are obsolete.

The comparative shortness of the tail distinguishes it from *G. lunulata*, *G. macrorhyncha*, and *G. cuneata*.

The general colour of the upper parts being russet-brown and not olive-brown distinguishes it from *G. varia*, *G. dauma*, *G. cuneata*, *G. lunulata*, and *G. imbricata*; but as this character varies to some extent, fresh-moulted birds of the year being most russet, and abraded adults most olive, it must be accepted with due regard to age and season.

None of these characters serve to distinguish *G. horsfieldi* from *G. nilgiriensis*, which may possibly be its nearest ally, in spite of the difference in the number of the tail-feathers.

G. nilgiriensis, when fully adult, has a larger bill and the Geocichline patches on the inner webs of the quills are white, whilst those of *G. horsfieldi*, so far as is known, are always buff; but as this character is not always constant in *G. dauma*, it may possibly vary also in *G. horsfieldi*, in which case the only difference between the Javan and the South-Indian species seems to be the number of tail-feathers.

Dr. Vian, in his "Notice sur les Merles du genre Oréocincle" (Bull. Soc. Zool. France, 1880, p. 222), denies that the Javan bird has fourteen tail-feathers, and refuses to admit any specific distinction between *Geocichla horsfieldi*, *G. lunulata*, and *G. heinii*. There can be no doubt that, both on the question of fact and on that of opinion, he is entirely wrong.

In its supplementary characters the species scarcely differs from *Geocichla imbricata*.

The Plate is drawn life-size from an example in my collection bought from a dealer, and represents an adult in excellent plumage. The figure in the fifth volume of the 'Catalogue of the Birds in the British Museum' represents a slightly faded example, which is the type of *Turdus varius* of Horsfield, of *Oreocincla horsfieldi* of Bonaparte, and of *Oreocincla malayana* of Sundevall.

GEOCICHLA PAPUENSIS, *Seebohm*.

NEW-GUINEA GROUND-THRUSH.

Geocichla papuensis, Seebohm, Cat. Birds Brit. Mus. v. p. 158, pl. ix. (1881).
Oreocincla papuensis, Salvad. Ann. Mus. Civic. Genov. xviii. p. 426 (1883).

G. suprà rufescenti-brunnea, nigro lunulata : pileo ochraceo variegato : rectricibus exterioribus intùs latè albis.

This species was discovered in the Astrolabe range of mountains in South-eastern New Guinea by Mr. A. Goldie. The type is in the British Museum, and is at present apparently the only one known. Nothing has been recorded of its habits.

Geocichla papuensis is apparently a very good species. It is the smallest in the sub-genus *Oreocincla*, but when a larger series has been obtained it will probably be found to intergrade in size with *G. imbricata*. Its chief characteristic is the great amount of white on the inner web of the outermost tail-feathers, the white extending for nearly two inches, somewhat more than in the allied species *G. heinii* and *G. cuneata*. It differs from both these species in having golden-buff sub-terminal bars across the feathers of the crown, and from the latter in having a proportionately shorter tail, besides being a smaller bird than either.

Wing 4·4 inches, tail 3·05 inches, culmen ·95 inch, tarsus 1·12 inch. The first primary is about the same length as the primary-coverts, the second primary is about equal to the sixth ; the tail, which consists of only twelve feathers, is less than four-fifths of the length of the wing, and the outermost rectrices are very little shorter than the longest.

In colour the species scarcely differs from *Geocichla heinii*, the brown of the upper parts being very russet, but there is more white on the outermost rectrices, and each feather of the crown and nape is crossed by a golden-buff sub-terminal band. The Geocichline markings on the under surface of the wing are buff, not white.

The figure in the Plate is drawn life-size from the type in the British Museum.

GEOCICHLA CUNEATA, *De Vis.*

DE VIS'S GROUND-THRUSH.

Geocichla cuneata, De Vis, Proc. Roy. Soc. Queensl. vi. p. 243 (1889).

G. suprà olivaceo-brunnea, nigro lunulata: pileo rufescenti-brunneo, nigro lunulato, haud ochraceo variegato: rectricibus lateralibus maculâ magnâ albâ (25 mm.) terminatis: caudâ longâ.

De Vis's Ground-Thrush was discovered in Queensland, in the mountains near Herberton (lat. 17° S.), at an elevation of 4500 feet above the sea. It appears to be a fairly distinct species, though in some respects it is intermediate between *Geocichla heinii* and *G. lunulata*. In proportion to the length of the wing, its tail is longer than that of the former and shorter than that of the latter. In colour it agrees in every respect with *G. lunulata* except that the white terminal wedge on the inner web of the outermost feather on each side of the tail is as much developed as in *G. heinii* and *G. papuensis*, measuring 1 to 1·3 inch in length. In its wing-formula it agrees with *G. lunulata* and not with *G. heinii*, the first primary not being longer than the primary-coverts, and the second primary being shorter than the sixth. The most remarkable peculiarity is the large size of its bill, which is greater than that of any other species in the sub-genus.

It is one of the larger species. Wing 5·6 to 5·4 inches, tail 4·5 to 4·3 inches, culmen 1·5 to 1·4 inch, tarsus 1·3 inch. The Geocichline markings on the under surface of the wing are buff in two examples, but nearly white in a third.

The figure in the Plate is of the size of life and is drawn from the type specimen, which Mr. De Vis had the great courtesy to send over to this country for the purpose.

GEOCICHLA HEINII (*Cab.*).

EAST-AUSTRALIAN GROUND-THRUSH.

Oreocincla heinii, Cabanis, Mus. Hein. i. p. 6 (1850).
Oreocincla iodura, Gould, Ann. & Mag. Nat. Hist. (4) ix. p. 401 (1872).
Turdus iodurus, Newton, ed. Yarrell's Brit. B. i. p. 256 (1872).
Geocichla heinii, Seebohm, Cat. Birds Brit. Mus. v. p. 157 (1881).

G. suprà rufescenti-brunnea, nigro lunulata: pileo haud ochraceo variegato: rectricibus externis latè (c. 25 mm.) albo terminatis.

The present species was described by Professor Cabanis from a specimen in the celebrated private collection of Oberamptmann Ferdinand Heine at Halberstadt. The locality was said to be "Japan," but this error was corrected by Cabanis in 1872 (J. f. O. 1872, p. 237), when examples from Queensland reached the Berlin Museum. In the same year Gould redescribed the species as *Oreocincla iodura*, and the type of the latter species is in the British Museum.

This Ground-Thrush seems to be confined to Eastern Australia. Dr. E. P. Ramsay gives its range as from Cape York to Rockingham Bay and Port Denison, but he does not recognize it as an inhabitant of the Wide Bay or Clarence River districts; there is, however, an example in the British Museum from the latter locality. Dr. Ramsay likewise includes it as an inhabitant of South-eastern New Guinea, but in this instance I think *G. papuensis* has been mistaken for *G. heinii*.

The East-Australian Ground-Thrush has often been confused with the allied *G. lunulata*, and nothing has been recorded of its habits. These are doubtless similar to those of the last-named bird.

Dr. Ramsay described the eggs of *G. heinii* from Rockingham Bay in 1875, under the name of *G. lunulata*; but as Mr. North, in his 'Descriptive Catalogue of the Nests and Eggs of Birds found breeding in Australia and Tasmania,' does not mention the present species, it is evident that he has not yet met with authentic eggs.

Geocichla heinii is a very distinct species, resembling *Geocichla papuensis* and *Geocichla cuneata* in having the inner web of the outermost rectrices white for an inch or more. It differs from the former of these two species in having the pale sub-terminal bars across the body-feathers of the upper parts almost obsolete, even on the crown, and from the latter by its smaller bill, shorter tail, more rufous upper tail-coverts, longer bastard-primary, and more pointed wing.

It is one of the smaller species, with a somewhat rounded wing, a long bastard-primary, a rather short tail, and a rather large bill. Wing 5·2 to 4·7 inches, tail 3·8 to 3·4 inches, culmen 1·25 to 1·1 inch, tarsus 1·18 to 1·15 inch. The first primary is longer than the primary-coverts; the second primary is shorter than the fifth, but longer than the sixth; the tail, which consists of only twelve feathers, is less than four-fifths of the length of the wing; and the outermost rectrices are very little shorter than the longest.

The general colour of the upper parts, especially of the rump and upper tail-coverts, is very russet, and even in abraded summer plumage can scarcely be called olive. The black crescentic markings on the upper parts are narrower than usual; there is very little buff on the breast, and the Geocichline markings on the inner webs of the quills are white.

The only species with which it is at all likely to be confused is *Geocichla papuensis*, which is a very distinct species, smaller in size, with more white on the outermost rectrices, and with pale subterminal bands across the feathers of the crown.

Neither the buff on the wing-coverts nor the black on the tail is much pronounced in *Geocichla heinii*.

This species has never been figured before. Mr. Keulemans has drawn a life-sized figure, which will be found on the same Plate as *G. papuensis*, from an example shot near Brisbane in Queensland.

GEOCICHLA LUNULATA (*Lath.*).

SOUTH-AUSTRALIAN GROUND-THRUSH.

Lunulated Thrush, Lath. Gen. Syn. Suppl. ii. p. 184 (1801).
Turdus lunulatus, Lath. Ind. Orn. Suppl. p. xlii (1801).
Turdus varius (nec Pall.), Vig. & Horsf. Trans. Linn. Soc. xv. p. 218 (1826).
Oreocincla novæ-hollandiæ, Gould, P. Z. S. 1837, p. 145.
Oreocincla lunulata, Gould, B. Austr. iv. pl. 7 (1848).
Geocichla lunulata, Seebohm, Cat. Birds Brit. Mus. v. p. 155 (1881).

G. suprà olivascenti-brunnea, nigro lunulata: pileo rufescenti-brunneo, nigro lunulato, haud ochraceo variegato: caudâ longâ, rectricibus externis angustè (c. 10 mm.) albo terminatis.

The range of the present species is given by Dr. E. P. Ramsay as from Victoria and South Australia to New South Wales and thence to the Richmond and Clarence Rivers and the Wide Bay district. If the latter distribution be correct, the ranges of *G. heinii* and *G. lunulata* must overlap (*cf.* Ramsay, Tab. List Austr. B. p. 11), but more definite information on this point is required.

Gould says:—"During the summer the present species ascends high up the mountain-sides, but in winter it descends to the lower districts, the outskirts of the forest, and occasionally visits the gardens of the settlers. Its chief food consists of helices and other molluscs, to which insects of many kinds are added; and it is most likely that fruits and berries occasionally form a part of its diet. It is a solitary species, more than two being rarely found together, and frequently only a single individual is to be seen, noiselessly hopping over the rugged ground in search of food. Its powers of flight are seldom exercised, and, so far as I am aware, it has no song." Doubtless the present species, like other members of the genus, sings during the nesting-season in the mountains.

Gould also gives a description of the nest and eggs, but as he unites *G. macrorhyncha* of Tasmania to *G. lunulata*, whereas I consider the two birds to be distinct, and, further, as he gives no measurements, I refrain from quoting his description of the eggs, as it is impossible to say to which species he is alluding.

Mr. A. J. North, however, in his 'Catalogue of the Nests and Eggs of Australian Birds,' has given an exact account of the eggs of this Thrush. He writes:—"The home of this species is in the thickly-wooded mountain-ranges of the coast. It is very plentiful in the Strzelecki Ranges in South Gippsland, frequenting alike the ground and fallen logs, and is a bird easily procured. In fact the difficulty in shooting it is to get far enough away from it to avoid damaging the specimen, a task which the intervening undergrowth seldom permits, without losing sight of the bird altogether.

"The nest is a round open structure, outwardly composed of fine strips of bark and mosses, lined with roots, the rim of the nest being very thick and rounded. The position of the nest varies with the locality in which it is found. In Gippsland it is usually placed between the thick fork of an *Eucalyptus* about seven or eight feet from the ground. At Cheltenham I have found it placed at the top of a *Melaleuca*. It commences to breed about the middle of July, and continues for the three following months.

"The eggs are two in number, elongated in form, in some instances of a pale stone-colour,

in others greenish, thickly speckled with reddish brown over the entire surface of the shell. Occasionally eggs are found with only a few minute markings upon the larger end. Dimensions of eggs taken at Cheltenham, in July 1878, were 1·4–1·42 × 0·91 inch. Others obtained at Dobroyde, in July 1860, measure as follows :—1·38–1·4 × 0·87–0·89 inch."

Mr. A. J. Campbell, another well-known authority on Australian oology, describes the ground-colour of the eggs of *G. lunulata* as light delicate green, washed and blotched, especially at the larger end, with pinkish red or brown. He gives the size as 1·28 × 0·83 inch.

Mr. Campbell further remarks that this bird is one of the earliest breeders, and that he has taken eggs in the coast ti-tree scrub in July. He describes the nests as situated in forks or limbs of low trees, and as made of green moss, dried leaves, grass, &c. matted together with dirt and sand, and securely lined with a thick ply of grass. The cup of the nest is 6 or 7 inches in diameter by 3 inches deep, and he says the bird sometimes rebuilds its old nests year after year, continually adding fresh material until the foundations become of immense size.

G. lunulata is a very distinct species, remarkable for its long tail, for the absence of pale bars across the feathers of the crown, and for the difference in colour between the crown and the rest of the upper parts. The four central tail-feathers are always paler and greener than the three feathers on each side of them, but in very faded examples the difference is occasionally less evident. The white at the end of the outermost rectrices seldom exceeds a quarter of an inch. The Geocichline markings on the inner webs of the quills are buff, or white tinged with buff.

The dimensions are as follows :—Length of wing 5·5 to 5·1 inches, tail 4·6 to 4·1 inches, culmen 1·25 to 1·2 inch, tarsus 1·3 to 1·25 inch. Outer tail-feathers about 0·2 inch shorter than the longest. First primary generally shorter than the primary-coverts. Second primary sometimes slightly shorter, sometimes slightly longer, than the sixth.

G. lunulata and *G. cuneata* are the only species of the sub-genus *Oreocincla* in which the ground-colour of the crown and nape is russet-brown, whilst that of the rest of the upper parts is olive-brown.

G. lunulata differs from all its allies, except *G. cuneata* and *G. heinii*, in having the pale sub-terminal bars across the feathers of the crown so obscure as to be practically obsolete.

It also differs from all its allies, excepting *G. macrorhyncha* and *G. cuneata*, in having the tail more than four-fifths of the length of the wing.

It further differs from *G. heinii*, *G. papuensis*, and *G. cuneata* in having the white at the tips of the outermost tail-feathers much less than an inch in length.

It differs from *G. varia* and *G. horsfieldi* in having only twelve rectrices.

The buff on the wing-coverts and the dark colour on the tail-feathers are less pronounced in this species than in any other belonging to the sub-genus, but the four central tail-feathers are always paler olive-brown than the rest.

The figure in the Plate is drawn of life-size, from an example in my collection purchased from a dealer. A full-sized figure has also been given in Gould's great work on the 'Birds of Australia' (vol. iv. plate 7), but the plate is not very satisfactory. The figure in Diggles's 'Ornithology of Australia' (part xvii.) is also life-size. The three species then known to inhabit Australia and Tasmania are confused together in the text of this work, and the plate is probably meant to represent the south-eastern form of *Oreocincla*.

GEOCICHLA MACRORHYNCHA (*Gould*).

TASMANIAN GROUND-THRUSH.

Oreocincla macrorhyncha, Gould, P. Z. S. 1837, p. 145.
Turdus macrorhynchus, Gray, Gen. B. i. p. 218 (1847).
Oreocincla lunulata (pt.), Gould, Handb. B. Austr. i. p. 439 (1865).
Geocichla macrorhyncha, Seebohm, Cat. Birds Brit. Mus. v. p. 156 (1881).

G. suprà rufescenti-brunnea, nigro lunulata: pileo ochraceo variegato: caudâ longâ, rectricibus externis angustè (c. 10 mm.) albo terminatis.

This Ground-Thrush was described from a specimen in the British Museum said to have come from New Zealand. This type specimen was apparently no longer in the collection when I described the Thrushes for the 'Catalogue of Birds' in 1881. Gould afterwards united the species to *G. lunulata*, but, in my opinion, they should be kept distinct; at all events on the present evidence at our disposal.

The Tasmanian Ground-Thrush resembles *G. lunulata* in the comparative length of the wing and tail, but the former bird has ochraceous-brown spots on the crown, nape, and scapulars, and is more buff on the breast. Inasmuch as both these characters are signs of immaturity in the sub-genus *Oreocincla*, it would appear at first sight as if the Tasmanian specimens were only the immature examples of the South-Australian *G. lunulata*, as Gould was inclined to consider them. As, however, all the Tasmanian examples that I have examined agree in having pale spots on the crown, nape, and scapulars, it would appear that this character is a distinctive one for the Tasmanian bird, which must, for the present at least, be regarded as specifically distinct from its Australian ally.

Gould describes the Tasmanian Ground-Thrush as being found by him on the slopes of Mount Wellington and other similar bold elevations. As in his 'Handbook' he does not distinguish between *G. macrorhyncha* and *G. lunulata*, the account of the habits given by him in the above-mentioned work may have been drawn only from his experiences in Tasmania.

Dr. E. P. Ramsay gives the following account of the eggs of the present species:—"The nest and eggs are very much the same as those of *G. lunulata*, Lath., but are larger; the eggs are three for a sitting, of a greenish white, strongly freckled all over, but more numerously at the larger end, with rich reddish brown; some confluent markings take a longitudinal direction or run obliquely with the long axis of the egg. An average specimen measures 1·33 inch in length by 0·95 inch through its short diameter." Mr. A. G. Campbell likewise remarks that the eggs of the Ground-Thrush which he took in Tasmania were larger than those which he procured in Victoria, measuring 1·35 by 0·94 inch. He further adds that this bird breeds so early in Tasmania that he has known eggs to be taken in July when the ground was covered with snow.

G. macrorhyncha is one of the three long-tailed species of the sub-genus *Oreocincla* in which the length of the tail is four-fifths or more the length of the wing. It is very easily distinguished from the other two long-tailed species. It agrees with one of them, *G. lunulata*, in having narrow (less than half an inch) white tips to the inner webs of the outermost tail-feathers, but differs from

the other, *G. cuneata*, in having pale russet-brown sub-terminal bars across the feathers of the crown.

In size it varies but little from its ally in South Australia. Wing 5·3 to 5·1 inches, tail 4·4 to 4·25 inches, culmen 1·28 to 1·2 inch, tarsus 1·45 to 1·35 inch.

The distant figure in the Plate of *G. lunulata* represents the present species. It is drawn from an example in the British Museum.

GEOCICHLA MOLLISSIMA (*Blyth*).

PLAIN-BACKED GROUND-THRUSH.

Turdus mollissimus, Blyth, Journ. A. S. Beng. xi. p. 188 (1842).
Turdus oreocincloides, Hodgs. in Gray's Zool. Misc. p. 83 (1844).
Oreocincla rostrata, Hodgs. Ann. & Mag. Nat. Hist. xv. p. 326 (1845).
Oreocincla mollissima, Blyth, J. A. S. Beng. xvi. p. 141 (1847); id. Cat. B. Mus. As. Soc. p. 160 (1849).
Turdus hodgsoni, Homeyer, Rhea, ii. p. 150 (1849).
Geocichla mollissima, Seebohm, Cat. Birds Brit. Mus. v. p. 159 (1881).
Geocichla dixoni, Seebohm, tom. cit. p. 161.

G. suprà rufescenti-brunnea, notæo concolori : subtùs ochracea, fasciis crescentibus nigris ornata.

The present species was first discovered by Dr. Pearson, who sent specimens from Darjiling to Blyth. About the same time Hodgson met with the species in Nepal, and in 1849 von Homeyer called it *Turdus hodgsoni*. This name has often been applied by Indian ornithologists to the Mistle-Thrush of the Himalayas, a mistake which seems to have been first committed by Bonaparte (Consp. Av. i. p. 269), although it was corrected by Cabanis (J. f. O. 1860, p. 183). Nevertheless the name has been often misapplied by ornithologists since that date, and the determination was accepted by Dresser in his 'Birds of Europe,' and by myself in the 'Catalogue of Birds.'

The present species breeds in the Himalayas, at an elevation of from 6000 to 8000 feet, from Chamba to Darjiling, and it descends to the lower valleys in winter. In 1881, I described a long-tailed form of the Plain-backed Ground-Thrush as *G. dixoni*, being more olive above and with pale fan-shaped spots on the median and greater wing-coverts. This race may be separated as *Geocichla mollissima dixoni*, but examples from Sikhim appear to be intermediate*.

The autumn migrations of this species do not appear to extend very far down the valleys where it breeds. Dr. Stoliczka found it in winter at Koteghur, north-east of Simla, from 4000 to 8000 feet above the sea-level (Pelzeln, Ibis, 1868, p. 313). Colonel Tickell, in his excellent manuscript work on the Birds of India, which is now in the library of the Zoological Society of London, remarks that he met with it at Darjiling for the first time in November 1843, and that he had not observed it during the summer. He describes it as skulking during the day in the most secluded parts of the

* [I have carefully examined the skins in the British Museum, referred by Mr. Seebohm to *Geocichla mollissima* and *G. dixoni*, and confirmed by Mr. Oates (Faun. Brit. Ind., Birds, ii. p. 155). In my opinion, the specimens labelled *G. dixoni* are merely the young of *G. mollissima*. The greater length of the tail does not hold good in a series, the olive colour of the back with the fan-shaped wing-spots can be connected in a series with the russet-coloured birds, and in every case the smaller amount of spotting on the underparts in so-called *G. dixoni* is what one would expect in a young Thrush of the *Oreocincla* group. Added to this, there is no distinctive geographical range for the two races, and they are admitted by the author in the 'Catalogue of Birds' to occur in the same countries, side by side. If my identification be correct, and I have little reason to doubt it, then the range of *Geocichla mollissima* extends from Chamba through the Himalayas to Assam, the Khasia Hills (Godwin-Austen, J. A. S. Beng. xxxix. pt. ii. p. 103) to Karennee (Wardlaw-Ramsay, Ibis, 1877, p. 463) and Manipur (spec. in Brit. Mus.), and thence to Moupin, where David found it at an elevation of 9000 to 10,000 feet above sea-level. When the mountains are covered with snow, it migrates to lower elevations (David & Oustalet, Ois. Chine, p. 159).—R. B. S.]

jungle, being especially fond of damp shady spots where the moss hangs in festoons from the bushes, and where the ground is soft and oozy, in fact "Woodcock ground," where it feeds on slugs and small leeches. In the evening it is not so shy, and may be seen hopping on unfrequented paths, but uttering no note during the cold season except a *chuck*. Its flight is swift, low, and short, and it generally alights suddenly, by flying up and resting upon some bare bough.

The habits of this species are elsewhere described as resembling those of its allies. It is generally found feeding on the ground in small parties, on a rather bare spot on the very summit of some hill, and flying into the brushwood when disturbed. It feeds on insects and berries (Jerdon, Birds of India, i. p. 533).

The nest of this species, brought from Native Sikhim about the end of June, is described as most lovely. It is a deep, large, massive cup (externally $5\frac{1}{2}$ inches wide by $3\frac{1}{4}$ inches high, internally $3\frac{1}{2}$ inches wide by 2 inches deep), of firmly felted green moss, with a thin lining of very fine black fern- and moss-roots. The eggs vary from 1·42 to 1·27 inch in length, and from ·9 to ·84 inch in breadth. The ground-colour is nearly dead white, speckled, spotted, and blotched with blood-red and brown-red, nearly confluent at the large end. The underlying spots are pale purple (Oates's edition of Hume's 'Nests and Eggs of Indian Birds,' ii. p. 108).

The adult male and female may be described as follows:—General colour of the upper parts russet-brown; lores buff; eye-stripe obsolete; lesser wing-coverts russet-brown; median and greater wing-coverts russet-brown; primary-coverts russet-brown, shading into dark brown on the inner webs and at the tips; tertials russet-brown; secondaries and primaries brown, margined with russet-brown on the outer webs; tail with the four central feathers russet-brown, the three next on each side dark brown, the external pair paler, with a deep white terminal wedge; some white at the tips of the two next feathers; ear-coverts black with buff centres; underparts white, shading into buff on the breast and flanks, almost unspotted on the chin and throat, with fan-shaped terminal black spots on the cheeks and upper breast, and crescent-shaped terminal black margins to the feathers on the rest of the underparts; rather obscure black malar stripes; under tail-coverts white with obscure brown edges; axillaries black with white bases; lower primary-coverts dark brown; lower secondary-coverts white with black bases.

Geocichline markings on inner webs of quills buff.

Bill dark brown, paler at the base of the under mandible; rictal bristles much developed; second primary intermediate in length between the fifth and sixth; tarsi, feet, and claws brownish yellow; outer tail-feathers ·15 inch shorter than the longest.

Length of wing 5·6 to 5·1 inches, tail 4·1 to 3·7 inches, culmen 1·1 to ·92 inch, tarsus 1·45 to 1·25 inch, bastard-primary slightly shorter than the primary-coverts, the exposed portion measuring 1·0 to ·9 inch.

Young in first plumage have pale shaft-lines and obscure dark margins to the feathers of the crown and back, and obscure buff tips to the median and greater wing-coverts. The pale tips to the wing-coverts are seldom quite lost in birds of the year.

Naumann figures a typical example as the male, and the Eastern race as the female of *Turdus mollissimus* (Naturgeschichte der Vögel Deutschlands, xiii. p. 255, pl. 353), on the ground that it may some day turn up in Europe! He discusses the difference between the two forms, and suggests that it must be one of sex.

The Eastern race was fairly well figured, four-sevenths of life-size, in 1877 (David et Oustalet, Oiseaux de la Chine, pl. 40).

The large figure in the foreground of the Plate represents the type of *Geocichla dixoni*, the size of life. This example was obtained, in February 1873, by one of Mandelli's collectors in Sikhim. The smaller figure in the distance represents the typical form of *Geocichla mollissima*, and is drawn from one of Mandelli's Darjeeling skins. Both examples are in my collection.

GEOCICHLA SPILOPTERA (*Blyth*).

SPOTTED-WINGED GROUND-THRUSH.

Oreocincla spiloptera, Blyth, J. A. S. Beng. xvi. p. 142 (1847).
Turdus spilopterus, Gray, Hand-list B. i. p. 254, no. 3693 (1869).
Geocichla spiloptera, Seebohm, Cat. Birds Brit. Mus. v. p. 167 (1881).

G. tectricibus alarum mediis et majoribus albo terminatis: pectore nigro maculato: rectricibus externis albo circumscriptè apicatis: lineâ superciliari vix evidente.

The original specimens of this Ground-Thrush were discovered in 1846 or 1847 by Dr. Templeton, on one of the mountain-ranges of the Central Province of Ceylon. The species was described by Blyth from specimens sent to the Calcutta Museum by Mr. E. L. Layard (*cf.* Blyth, Cat. B. Mus. As. Soc. p. 160), and the types are still preserved in that institution (*cf.* W. L. Sclater, Ibis, 1892, p. 81).

The position usually assigned to this species has been in the genus *Oreocincla*, in which we find it in Mr. Oates's recent work on the Birds of India. In 1881, I referred it to the genus *Geocichla*, and I still consider it to be properly placed among this section of the Ground-Thrushes. Colonel Legge has recognized it as a member of the genus *Turdus*, a conclusion with which I cannot agree, despite my admiration for the work done by that excellent naturalist.

It is to Colonel Legge that we owe our knowledge of the distribution and habits of the present species in Ceylon. Mr. E. W. H. Holdsworth states that it is found in the mountains of the Central Province between 2000 and 5000 feet (P. Z. S. 1872, p. 446). Colonel Legge supplements this observation by recording its occurrence in the south and west of the island at much lower elevations, and he has known it to be procured within a few miles of Colombo (B. Ceylon, p. 452).

According to the last-named observer, it is "a shy and retiring bird, frequenting damp jungle, undergrowth in forests, and bamboo-thickets, not often mounting to any height on trees, but passing its time near the ground, about which it hops quietly, picking up pupæ, coleoptera, and other insects; and when alarmed it runs very quickly through underwood, uttering a weak chirping note. The male has a very pretty whistle, ending in a human-like note, which it utters, seated on a low branch, for a considerable time at intervals during the day, but chiefly in the morning and evening. Both sexes have a weak, almost inaudible '*tzsee*,' which they utter, as the Blackbird does, whilst searching for food. It does not often come into the open, but at sunset I have now and then seen it in little copses of guava and other small trees which are to be found in the meadows on the banks of some of the western streams; and I once shot one whistling in a clump of the tall bamboo (*Bambusa thouarsi*). The young bird quickly acquires its vocal powers, and whistles as sweetly in the soft-gape stage as an adult."

Colonel Legge was the first to discover the nest and describe the eggs of this species. He found the nest in January 1873 near a stream in some fine forest 15 miles from Trincomalee. It was built in the fork of a small sapling about $3\frac{1}{2}$ feet from the ground, and is described as resembling that of a Blackbird in structure, and as having a loose exterior of small twigs with a lining of grasses. The interior was tolerably well finished and rather deep. The eggs were two in number, of a bluish-

green ground, freckled and spotted, mostly at the obtuse end, with light red and reddish grey over lilac-grey spots (Stray Feathers, 1875, p. 367).

The breeding-season is by no means confined to January. In his 'History of the Birds of Ceylon,' Colonel Legge remarks that Mr. MacVicar has taken the eggs of this species near Colombo in May, and I have in my collection a half-fledged young bird procured by Colonel Legge on the 15th of September, 1875, at Uva. He adds that the nest is sometimes placed among the roots of a tree on a bank or little eminence, that the eggs are sometimes three in number, and that they measure 1·17 to 1·06 inch in length, by 0·77 to 0·74 inch in breadth.

The adult male and female in spring plumage may be described as follows:—General colour of the upper parts russet-brown, most rufous on the upper tail-coverts and least so on the crown; lores nearly white; eye-stripe obsolete; lesser wing-coverts russet-brown; median and greater wing-coverts blackish brown, with large white terminal fan-shaped spots; primary-coverts blackish brown, with an olive-brown streak on the outer web; tertials russet-brown; secondaries and primaries brown, margined with russet-brown on the outer webs; tail-feathers russet-brown, the outer pair occasionally showing traces of a narrow terminal white margin; ear-coverts nearly white, crossed by two broad black bars; underparts white, ornamented on the cheeks, breast, and flanks with large black guttate spots; axillaries brown, with white bases; under primary-coverts brown; under secondary-coverts white, with nearly black bases.

The Geocichline markings on the inner webs of the quills are white.

Bill nearly black; second primary intermediate in length between the eighth and ninth; tarsi, toes, and claws greyish flesh-colour; outer tail-feathers ·3 inch shorter than the longest.

Length of wing 4·1 to 3·8 inches, tail 3·4 to 3·0 inches, culmen ·91 to ·85 inch, tarsus 1·5 to 1·3 inch, bastard-primary frequently extending ·3 to ·2 inch beyond the primary-coverts, its exposed portion measuring 1·05 to ·9 inch.

Young in first plumage have pale shaft-streaks to all the small feathers of the upper parts, the median and greater wing-coverts are as in adults, but the whole of the underparts are suffused with brownish buff and the spots are very obscure. The Geocichline markings on the inner webs of the quills are as in adults.

In newly moulted autumn plumage the brown of the upper parts is very russet.

The figure of the adult in the Plate is that of a male in my collection shot at an elevation of 200 feet above the level of the sea on the Sittawak ganga, a large affluent of the Kelani ganga, which enters the sea near Colombo, on the 9th of August, 1876, by Colonel Legge, and is of the size of life. The same example is figured two-thirds of the size of life in Legge's 'Birds of Ceylon.' The figure of the nestling on my Plate is that of the young bird already mentioned as having been procured by Colonel Legge on the 15th of September, 1875, near Uva.

GEOCICHLA GUTTATA (*Vigors*).

NATAL GROUND-THRUSH.

Turdus guttatus, Vigors, P. Z. S. 1831, p. 92.
Psophocichla guttata, Cab. J. f. O. 1860, p. 182.
Geocichla guttata, Seebohm, Cat. Birds Brit. Mus. v. p. 168 (1881).

G. tectricibus alarum mediis et majoribus albo terminatis: pectore nigro maculato: rectricibus externis latè albo apicatis: lineâ superciliari vix evidente.

This species was described by Vigors from a specimen sent in a collection of birds shipped from Port Elizabeth, and the typical example was presented to the Zoological Society of London; but it does not appear to have passed into the British Museum, as did most of the types belonging to the Society's old museum.

As far as is known, the present bird has not been found in any portion of the Eastern Cape Colony, but it occurs in Natal. Here it was rediscovered by Sir Andrew Smith, who states that none were found by him beyond the forests which border upon Port Natal. There he procured some specimens in damp retired situations, and, when discovered, the birds were actively employed in search of food beneath the brushwood.

I am not aware that the species has been met with in any other part of South Africa, and Messrs. R. B. and J. D. S. Woodward have not procured it in Zulu-land. In East Africa, however, it was found by Fischer at Kipini, in the Formosa Bay district (J. f. O. 1879, pp. 278, 287, 356). Between Mombasa and the Tana River he says that the species was plentiful in some places on the coast. According to him, it never leaves the forest, and was often to be seen on the ground, especially in the neighbourhood of ants' nests. It was generally observed in pairs, and was very shy and difficult to shoot. He describes the song as very peculiar and wonderful, but not often heard.

The Natal Ground-Thrush appears to be more closely related to the Spotted-winged Ground-Thrush than it is to any of its African relations; and though the two species differ in many little details, the superficial resemblance between them is very striking. *G. guttata* is, however, a clearly defined species and can easily be diagnosed. The first character—median and greater wing-coverts tipped with large pure white fan-shaped spots—excludes every species of the section except ten species. A second character—breast and flanks ornamented with black guttate spots—excludes all the latter with the single exception of *Geocichla spiloptera*. From this species it is easily diagnosed by a third character—outer tail-feathers with white terminal spots, an inch or more in extent.

The adult male and female in spring plumage may be described as follows:—General colour of the upper parts olive, slightly more fulvous on the head; lores nearly white; eye-stripe obsolete; lesser wing-coverts olive-brown; median and greater wing-coverts blackish brown, with large white terminal fan-shaped spots; primary-coverts blackish brown, with a pale olive streak on the outer web; tertials olive-brown with obscure pale tips; secondaries and primaries brown, margined with olive-brown on the outer webs; tail-feathers olive-brown, the outer pair with a deep ($1\frac{1}{4}$ inch) terminal wedge of white, the two next pairs more or less tipped with white; ear-coverts buff, crossed

by two broad black bars; underparts white, suffused with yellow on the breast, and ornamented on the cheeks, breast, and flanks with large black guttate spots; axillaries brown with white bases; lower primary-coverts brown; lower secondary wing-coverts white, with nearly black bases. The Geocichline markings on the inner webs of the quills are white.

Bill dark brown, paler at the base of the under mandible; tarsi, toes, and claws pale flesh-colour; second primary intermediate in length between the sixth and seventh; outer tail-feathers ·1 inch shorter than the longest.

Length of wing 4·9 to 4·5 inches, tail 3·7 to 3·4 inches, culmen 1·0 to ·9 inch, tarsus 1·3 to 1·2 inch; bastard-primary generally projecting beyond the primary-coverts, its exposed portion measuring ·9 to ·75 inch.

Young in first plumage are unknown.

In newly moulted autumn plumage the olive-brown of the upper parts is slightly suffused with russet.

The Plate represents an example purchased from Mr. Whitely, who received it from Natal, and is of full size. A poor, but recognizable figure was given by Smith in 1839 in his 'Illustrations of the Zoology of South Africa' (pl. xxxix.).

GEOCICHLA PRINCII (*Sharpe*).

USSHER'S GROUND-THRUSH.

Chamætylas princei, Sharpe, P. Z. S. 1872, p. 625.
Turdus bivittatus, Reichen. J. f. O. 1874, p. 104, 1875, p. 47.
Geocichla princei, Seebohm, Cat. Birds Brit. Mus. v. p. 164, pl. xii. (1881).

G. tectricibus alarum mediis et majoribus albo terminatis: supercilio pallido vix evidente: pectore lutescenti-brunneo, immaculato.

Ussher's Ground-Thrush was discovered in the interior of the Gold Coast by a native collector named Aubinn, who was employed for years by Governor Ussher, who added so much to our knowledge of the avifauna of West Africa. Aubinn met with the species in the province of Denkera, and it was discovered almost at the same time by Dr. Reichenow in the mountains of Aburi in Aguapim, and described as *Turdus bivittatus*. From the Gold Coast the range of the species extends to Liberia, where Dr. Büttikofer obtained an immature specimen on Du Queah (Notes Leyden Mus. 1888, p. 77).

Ussher's Ground-Thrush has the two broad black bands across the ear-coverts, so conspicuous in *Geocichla guttata*, *G. spiloptera*, and *G. peroni*. In the absence of spots on the underparts it agrees with *Geocichla crossleyi*, *G. gurneyi*, *G. piaggiæ*, and *G. peroni*. From the last-mentioned species it differs in having the breast and flanks pale dull brown, instead of rich chestnut-orange. The character of the white terminal spots on the median and greater wing-coverts excludes every other species of the genus.

The adult may be described as follows:—

General colour of the upper parts russet-brown, more russet on the upper tail-coverts, but inclining to olive on the crown; lores dirty white; eye-stripe obsolete; lesser wing-coverts russet-brown; median and greater wing-coverts blackish brown, with large white terminal fan-shaped spots; primary-coverts dark brown; tertials russet-brown; secondaries and primaries brown, margined with russet-brown on the outer webs; tail-feathers russet-brown, the two outer ones with narrow white tips; ear-coverts buffish white, crossed by two broad black bars; underparts pale russet-brown, darkening on the breast and flanks and shading into white on the chin, centre of belly, and under tail-coverts; axillaries nearly black, with white bases; lower primary-coverts brown; lower secondary-coverts white, with nearly black bases.

Geocichline markings on inner webs of quills white.

Bill nearly black, paler at the base of the under mandible. Second primary intermediate in length between the fourth and fifth. Legs, feet, and claws flesh-colour; outer tail-feathers 0·2 inch shorter than the longest.

Length of wing 4·5 to 4·1 inches, tail 3·02 to 3·0 inches, culmen ·9 to ·86 inch, tarsus 1·37 to 1·3 inch, bastard-primary 1·0 to ·95 inch.

The seasonal changes are unknown.

Young in the first plumage differ from adults in having pale shaft-streaks to most of the feathers of the upper parts and obscure dark markings across many of the feathers of the underparts.

The terminal spots on the greater wing-coverts are as white as in adults, but those on the median wing-coverts are pale rusty orange.

The figure in the Plate represents the type specimen in the British Museum, which has also been figured on a smaller scale (three-fourths natural size) in the 'Catalogue of the Birds in the British Museum,' vol. v. pl. xii.

GEOCICHLA CROSSLEYI (*Sharpe*).

CROSSLEY'S GROUND-THRUSH.

Turdus crossleyi, Sharpe, P. Z. S. 1871, p. 607, pl. xlvii.
Geocichla crossleyi, Seebohm, Cat. Birds Brit. Mus. v. p. 171 (1881).

G. tectricibus alarum mediis et majoribus albo terminatis: supercilio pallido vix evidente: gutture et pectore castaneis, minimè maculatis: loris et regione paroticâ nigris.

This species was discovered in 1871 by the late Mr. A. Crossley, an excellent collector who used to travel for Mr. Ward of Halifax. He procured but a single specimen on the Cameroon Mountains on the 24th of February, 1871.

The curious fact about the present bird is that, although it is a distinct and somewhat striking species, no one has managed to rediscover it, though such excellent natualists as Sir Harry Johnston, Mr. Sjöstedt, and Dr. Zenker have been working in the same districts as Crossley. Consequently nothing whatever is known of its changes of plumage, its habits, nest, or eggs.

The nearest allies of *G. crossleyi* are *G. piaggiæ* from Uganda and *G. gurneyi* from Natal, and it differs from them only in minute details of coloration. It agrees with the latter species and differs from *G. piaggiæ* in having dark ear-coverts and rusty-orange flanks, while, on the other hand, it agrees with *G. gurneyi* and differs from *G. piaggiæ* in having the forehead rusty orange. It differs from both, however, in having very dark lores, and in having the rusty-orange colour of the breast extending to the nape.

The type, of which the sex is unknown, appears to be an adult bird, and may be described as follows:—

General colour of the upper parts russet-brown, darker and more russet on the crown, rump, and upper tail-coverts, and shading into bright rufous-chestnut on the nape; lores dark brown; traces of a pale eye-stripe only above the lores; lesser wing-coverts russet-brown; median and greater wing-coverts blackish brown, with large white terminal fan-shaped spots; tertials russet-brown, more rufous on the outside webs and most so at the tips; secondaries and primaries brown, margined with russet-brown on the outer webs; tail-feathers russet-brown, the outer pair obscurely tipped with white; ear-coverts nearly black; underparts bright orange-chestnut, shading rather suddenly into white on the belly, thighs, and under tail-coverts, and into black on the chin; axillaries dark olive-brown, with white bases; lower primary-coverts brown; lower secondary wing-coverts white, with dark brown bases.

Geocichline markings on inner webs of quills white.

Bill dark brown; second primary intermediate in length between the seventh and eighth; tarsi, toes, and claws pale; outer tail-feathers shorter than the longest.

Length of wing 4·0 inches, tail 2·95 inches, culmen ·91 inch, tarsus 1·3 inch, bastard-primary 0·9 inch.

The figure on the Plate is drawn life-size, and represents the type of *Geocichla crossleyi* in the British Museum. It has been figured before (Sharpe, 'Proceedings of the Zoological Society of London,' 1871, pl. xlvii.), but by no means satisfactorily: the scale is only three-fifths of the life-size, the head is too large, the beak is too thick, the back is too black, and the head and breast are too yellow.

GEOCICHLA GURNEYI (*Hartl.*).

GURNEY'S GROUND-THRUSH.

Turdus gurneyi, Hartlaub, Ibis, 1864, p. 350, pl. ix.
Geocichla gurneyi, Seebohm, Cat. Birds Brit. Mus. v. p. 170 (1881).

G. tectricibus alarum mediis et majoribus albo terminatis: supercilio pallido vix evidente: fronte atque pileo olivascenti-brunneis, dorso concoloribus: pectore castaneo, immaculato.

Gurney's Ground-Thrush was first discovered by that veteran ornithologist, Thomas Ayres, who procured a single male bird in a precipitous range of hills about six miles from Pietermaritzburg in Natal. The same collector obtained a second specimen in 1875, in the Macamac district of the Eastern Transvaal. This was also a male bird, and is now in the British Museum.

These two examples were the only ones known till Mr. Alexander Whyte, who has done so much to increase our knowledge of the avifauna of British Central Africa, under the auspices of Sir Harry Johnston, rediscovered the species on Mount Zomba in Nyasaland, and the same naturalist found it on the Milanji Highlands at 6000 feet (Shelley, Ibis, 1893, p. 13, 1894, p. 9). A female bird was also obtained by Mr. Whyte at Fort Lister, a station at the extreme north-east end of the Milanji range at an elevation of 3300 feet (Whyte, Ibis, 1894, pp. 463, 468).

From the above records, the range of the species, so far as is known at present, extends from about 15° S. lat. to nearly 30° S. lat. The supposed occurrence of *G. gurneyi* in North-east Africa (Heuglin, Orn. N.O.-Afr. i. p. 384) doubtless refers to *G. piaggiæ*.

Nothing has as yet been recorded concerning the habits or nidification of this species.

Gurney's Ground-Thrush is very easily diagnosed from the other Ground-Thrushes which, like it, have white terminal spots to the median and greater wing-coverts. No other species of this little group combines the character of the unspotted underparts with the crown, forehead, and ear-coverts dark olive-brown.

The adult male and female may be described as follows:—

General colour of the upper parts olive-brown, slightly darker on the crown and shading into russet-brown on the rump and upper tail-coverts; lores chestnut; eye-stripe obsolete; lesser wing-coverts russet-brown; greater and median wing-coverts nearly black, with large white terminal fan-shaped spots; primary-coverts brown, with a pale olive-brown streak on the outer web; tertials russet-brown; secondaries and primaries brown, margined with russet-brown on the outer webs; tail feathers russet-brown, the outer pair obscurely tipped with white; ear-coverts dark olive-brown; underparts orange-chestnut, shading rather suddenly into white on the belly, thighs, and under tail-coverts, the longest of which are obscurely margined with brown; axillaries dark olive-brown, with white bases; lower primary-coverts brown; lower secondary-coverts white, with dark brown bases.

Geocichline markings on the inner webs of the quills white; bill dark brown; second primary intermediate in length between the eighth and ninth; legs, feet, and claws flesh-colour; outer tail-feathers 0·25 inch shorter than the longest.

Length of wing 4·2 to 4·0 inches, tail 3·4 to 2·85 inches, culmen ·9 to ·8 inch, tarsus 1·4 to 1·25 inch, bastard-primary 1·2 to 1·1 inch.

Young in first plumage are unknown.

The Plate represents the example in the British Museum from Macamac, and is life-size. The type specimen has been figured by Wolf, of half the natural size (Ibis, 1864, plate ix.).

GEOCICHLA PIAGGIÆ (*Bouvier*).

PIAGGIA'S GROUND-THRUSH.

? *Turdus fauve ou roux*, Des Murs, Lefebvre, Voy. Abyss. Ois. p. 168 (1845).
Turdus gurneyi (nec Hartl.), Heugl. Orn. N.O.-Afr. i. p. 384 (1869).
Turdus piaggiæ, Bouvier, Bull. Soc. Zool. France, ii. p. 456 (1877).
Geocichla piaggii, Seebohm, Cat. Birds Brit. Mus. v. p. 171, pl. xi. (1881).
Geocichla piaggiæ, Salvad. Ann. Mus. Civic. Genov. (2) i. p. 157 (1884).

G. tectricibus alarum mediis et majoribus albo terminatis: supercilio pallido nullo: pileo et pectore castaneis, immaculatis.

The first notice of this species appears to have been that of Lefebvre, who discovered it at "Maiberaisio," in East Abyssinia, in April 1840. It was described by Des Murs under no less a name than "*Turdus fauve ou roux*," from a drawing made by M. Vignaud.

Von Heuglin procured an example of this species in January 1862, in Wogara, to the north of Lake Tsana, in Abyssinia, but he erroneously identified it with *Geocichla gurneyi*. This specimen is now in the Bremen Museum.

About fourteen years afterwards it was rediscovered by Piaggia on Lake "Sannè" in M'Tesa's country. M. Bouvier brought the type specimen to the British Museum, and receiving the assurance that the species was new to science, named it after Emin's brave colleague, Piaggia. The type is now in the British Museum.

The late Marquis Antinori discovered the species in Shoa (Salvadori, Ann. Mus. Civic. Genov. (2) i. p. 157), where it was breeding, and Dr. Ragazzi also met with it in the same country (Salvadori, *op. cit.* (2) vi. p. 258).

Antinori states that Piaggia's Ground-Thrush is a resident species in Shoa, and he obtained several specimens in the forests of Fecheriè-Ghem, at about 10,000 feet above the level of the sea. The bird was very shy and difficult to shoot, frequenting the deepest forests, where it searched for worms on the ground.

Piaggia's Ground-Thrush has no spots on the underparts, a character which it shares with *Geocichla crossleyi*, *Geocichla gurneyi*, *Geocichla princii*, and *Geocichla peroni*. It differs from the two latter species in not having the black bands across the ear-coverts. The two former are unquestionably its nearest allies, especially *Geocichla crossleyi*, from which it chiefly differs in the colour of its lores and ear-coverts, which are chestnut, instead of being nearly black. From *Geocichla gurneyi* the marked difference in the colour of the crown and forehead, which is chestnut-brown instead of dark olive-brown, is a distinguishing characteristic.

The type specimen, of which neither sex nor season is known, may be described as follows:—

General colour of the upper parts shading into russet on the upper tail-coverts and crown, and into chestnut on the forehead; lores dull chestnut; eye-stripe obsolete; lesser wing-coverts russet-brown; median and greater wing-coverts blackish brown, with large white terminal fan-shaped spots; primary-coverts blackish brown, with a pale olive streak on the outer webs; tail-feathers russet-brown, with narrow white tips to several of the outer pairs; ear-coverts dull chestnut; underparts rich

orange-chestnut, shading into white on the centre of the belly, thighs, and under tail-coverts, and into olive-brown on the flanks; axillaries brown, with white bases; lower primary-coverts brown; lower secondary-coverts white, with brown bases.

Geocichline markings on inner webs of quills, white.

Bill dark brown; second primary intermediate in length between the seventh and eighth. Feet and claws pale; outer tail-feathers 0·3 shorter than the longest; length of wing 4·15 to 4 inches, tail 3·65 to 3·3 inches, culmen ·86 to ·8 inch, tarsus 1·3 inch; bastard-primary projecting 0·3 inch beyond the primary-coverts, its exposed portion measuring 1·05 inch.

A half-fledged nestling procured by the Marquis Antinori is described by Count Salvadori as having pale shaft-streaks on most of the feathers of the upper parts, and obscure dark bars across many of the feathers of the underparts (in both respects resembling the nestling of *Geocichla princii*); but the white terminal spots on both the median and greater wing-coverts are described as white (in the nestling of *Geocichla princii* the spots on the median wing-coverts are rufous).

The Plate represents one of the typical specimens from "Lake Sannè" in my collection, and is drawn of the size of life. The type in the British Museum, obtained at the same time, has been figured, three-fourths of the size of life, on plate xi. of the fifth volume of the 'Catalogue of Birds.'

GEOCICHLA MACHIKI, *Forbes*.

FORBES'S GROUND-THRUSH.

Geocichla sp., Sclater, P. Z. S. 1883, p. 56.
Geocichla machiki, Forbes, P. Z. S. 1883, p. 588.

G. tectricibus alarum mediis et majoribus albo terminatis: pectore ochrascenti-albo, concolore: hypochondriis nigro maculatis.

Only two specimens of Forbes's Ground-Thrush are known at present, and these are in the British Museum. One of these is adult and the other immature.

The species was discovered by Dr. H. O. Forbes, during his celebrated expedition to the Malay Archipelago, in the island of Timor Laut in the Tenimber group. He stayed three months in this locality and endured great privations, bravely shared by his wife, but with the result that more than twenty new species of birds were discovered, of which *Geocichla machiki* was not the least interesting.

Dr. Forbes writes:—"I propose that this new species should bear the name *machiki*, as a slight mark of remembrance of Dr. Julius Machik, of Budapest, Surgeon-Captain in the Dutch army, and of appreciation of his extreme kindness and hospitality, and of the very great assistance rendered by him to me in Sumatra, and more especially in Amboina to my wife and myself, both before and after our return from the Tenimber Islands."

Nothing has been recorded of the habits or nidification of this species. *G. machiki* is somewhat intermediate between *G. peronii* of Timor and *G. erythronota* of Celebes. It agrees with the former in the pale tips to the inner secondaries, as well as in the absence of black on the throat, wings, and tail. Like *G. erythronota* it has black crescentic markings on the flanks, and it agrees with both species in its pale lores and the white patches at the end of the outer pair of tail-feathers.

Forbes's Ground-Thrush appears to be nearly related to the African species of this section of the genus; on the other hand, the fact of its being the only Ground-Thrush in the Malay Archipelago in which the ear-coverts are not crossed by dark bands, may suggest relationship with the females of *G. sibirica* and *G. wardi*. The somewhat obscure pale eye-stripe might be supposed to be a further confirmation of this relationship. In the Tenimber Islands, moreover, there is another Ground-Thrush, allied to *G. wardi* and *G. sibirica*, of which only males have yet been discovered, and it might reasonably be supposed that *G. machiki*, the type of which is a hen bird, might be the female of this *G. schistacea*. In spite of this seeming probability, it is impossible to adopt this conclusion from the material at our command. *G. machiki* is larger than *G. schistacea*, and has the typical coloration of the axillaries in this section of the genus, viz. black with white bases, whereas in *G. schistacea* they are white.

The type specimen of *G. machiki* appears to be a female in autumn plumage, and may be described as follows:—

General colour of the upper parts olive-brown, shading into slate-colour on the head and into chestnut on the rump and upper tail-coverts; lores white; eye-stripe pale buff, mottled with brown; lesser wing-coverts olive-brown, with more or less obscure pale tips; median wing-coverts nearly

black, tipped with white on both webs; greater wing-coverts dark brown, with large white fan-shaped terminal spots; primary wing-coverts dark brown, with a broad olive-brown patch on the outer webs; tertials russet-brown, obscurely tipped with white; secondaries brown, broadly margined with russet-brown on the outer webs; primaries brown, margined with pale brown on the outer webs; tail-feathers russet-brown, the outer pair with a deep terminal wedge of white; ear-coverts white, mottled with slaty brown; cheeks, chin, throat, and breast buffish white; rest of the underparts white, the feathers of the flanks broadly tipped with crescentic black marks; axillaries black, with white bases; lower primary-coverts brown; lower secondary-coverts white, with grey bases.

Geocichline markings on inner webs of quills, white.

Bill sooty grey above, yellow below; second primary intermediate in length between the sixth and seventh; tarsi and feet pale flesh-colour; outer tail-feathers very slightly shorter than the longest.

Length of wing 4·45 to 4·3 inches, tail 3·2 to 3·1 inches, culmen 1·0 inch, tarsus 1·3 to 1·2 inch; bastard-primary extending far beyond the primary-coverts, its exposed portion measuring 1·15 to 1·05 inch.

The male is unknown.

The immature example shows remains of the first plumage, some feathers on the nape and some of the scapulars having pale shaft-streaks and black tips, while most of the feathers of the upper parts show more or less obscure dark margins. The crescentic spots on the flanks extend also to the breast.

The Plate is drawn life-size from the type in the British Museum. It has previously been figured, but only two-thirds of the natural size (Forbes, 'Proceedings of the Zoological Society of London,' 1883, plate lii.). An uncoloured copy of this plate is given by Forbes in his 'Naturalist's Wanderings in the Eastern Archipelago' (p. 337).

GEOCICHLA PERONII (*Vieill.*).

PÉRON'S GROUND-THRUSH.

Turdus peronii, Vieill. Nouv. Dict. d'Hist. Nat. xx. p. 276 (1818).
Turdus novæ-hollandiæ (nec Lath.), Less. Traité d'Orn. p. 411 (1831).
Geocichla rubiginosa, S. Müll. Verh. nat. Gesch. Zool. p. 172 (1840).
Turdus rubiginosus, Gray, Gen. B. i. p. 220 (1847).
Geocichla peronii, Seebohm, Cat. Birds Brit. Mus. v. p. 169 (1881).

G. tectricibus alarum mediis et majoribus albo terminatis: supercilio pallido vix evidente: rectricibus lateralibus albo terminatis: gulâ albâ: pectore castaneo, immaculato.

Péron's Ground-Thrush was discovered on the Island of Timor very early in the century by François Péron, a French naturalist and traveller. Péron was born in 1775, sailed from Havre in the 'Géographe' under Captain Baudin in 1800, was in Timor in 1801, visited Australia in 1802, revisited Timor in 1803, returned to France in 1804, and died in 1810. Péron's Ground-Thrush made its first appearance in literature in 1818 under the name of "Le Merle Péron," *Turdus peronii*, in the 'Nouveau Dictionnaire d'Histoire Naturelle' (xx. p. 276). In those days the importance of geographical distribution was very little appreciated, the exact places where the specimens brought home by the Baudin Expedition had been obtained were confused together, and Péron's Ground-Thrush appeared in the Paris Museum with the erroneous locality of "New Holland" attached to it.

About the year 1828 the species was rediscovered by Solomon Müller on the island of Timor, and named by him *Geocichla rubiginosa*.

Nothing apparently has been recorded of its habits, which are doubtless the same as those of its allies.

The adult male and female may be described as follows:—

General colour of the upper parts buffish chestnut, slightly darker on the crown; lores white; eye-stripe obsolete; lesser wing-coverts dull buffish chestnut; median and greater wing-coverts nearly black, with brown margins, and with large white terminal fan-shaped spots; primary-coverts dark brown, with a white streak on the outer web; tertials russet-brown, with pale tips; secondaries brown, margined with buffish brown towards the tips and with white at the base of the outer webs; primaries, where not emarginated, edged with white; tail-feathers brown, suffused with chestnut on the outer webs, the outer pair with a deep terminal wedge of white, nearly an inch in extent, the next pair more or less tipped with white; ear-coverts white, crossed by two black bands; underparts orange-chestnut, except the chin, throat, centre of belly, thighs, and under tail-coverts, which are white, and the cheeks, which are white mottled with black; axillaries dark brown, with white bases; lower primary-coverts brown; lower secondary-coverts white, with dark brown bases.

Geocichline markings on inner webs of quills, white.

Bill dark brown, paler at the base of the under mandible; second primary intermediate between the sixth and seventh; tarsi, feet, and claws pale; outer tail-feathers very slightly shorter than the longest.

Length of wing 4·25 to 4·15 inches, tail 3·25 to 3·1 inches, culmen 1·0 to 0·85 inch, tarsus 1·4 to 1·3 inch; bastard-primary projecting about 0·1 inch beyond the primary-coverts, its exposed portion measuring 1·0 to 0·85 inch.

Young in first plumage are unknown. Females are believed to resemble males in colour.

In spite of the fact that Péron's Ground-Thrush has the underparts unspotted, and the black bands across the ear-coverts as in *Geocichla princii*, and that it differs so widely in the colour of the underparts from *Geocichla erythronota*, there are reasons why it should be regarded as most nearly allied to the latter species. That they are the only two Ground-Thrushes which are orange-chestnut above from crown to upper tail-coverts is, perhaps, not of much importance; but that no other Ground-Thrushes have white margins to the unemarginated outer webs of the primaries, and have white at the bases of the outer webs of the secondaries, suggests the probability that these characters have been inherited from common ancestors and have not been independently acquired.

The figure on the Plate to the left of *Geocichla erythronota* represents an example in my collection; it was obtained on the island of Timor by Mr. Wallace during his celebrated voyage to the Malay Archipelago.

Vieillot's type was figured in 1855 (Pucheran, 'Archives du Musée d'Histoire Naturelle,' vii. plate 19) and is sufficiently well drawn and coloured to leave no doubt as to the identification.

GEOCICHLA ERYTHRONOTA, *Sclater.*

CELEBEAN GROUND-THRUSH.

Geocichla erythronota, Sclater, Ibis, 1859, p. 113.
Turdus erythronotus, Gray, Hand-l. B. i. p. 260, no. 3795 (1869).

G. tectricibus alarum mediis et majoribus albo terminatis : notæo castaneo : hypochondriis nigro maculatis.

The present species was discovered by Dr. Alfred Russel Wallace near Makassar in the island of Celebes. It appears to be confined to this island, and to occur both in the southern and northern parts. Dr. Meyer has procured it near Menado in the north.

Dr. Meyer, who spent some months in Celebes, from December 1870 to November 1871, and revisited the island for a short time in 1873, states that he observed this species five miles from Menado on the way to Lotta in February and March, at Tumumpat near Menado in March, and in the churchyard of the Europeans at Menado from April to July. It lives on the ground and is very shy, so that it can only be shot from some distance away. The crops of those he dissected contained beetles.

Geocichla erythronota agrees with *G. leucolæma* and *G. interpres* in having the crown and nape very rufous, the breast black, and the flanks spotted with black, a combination not found elsewhere in the genus. Its rufous back and nearly black tail distinguish it from both its allies.

It appears to be most nearly related to *Geocichla interpres*, and is also possibly related to *Geocichla schistacea*. It agrees with the former in the chestnut of its crown and nape, and in its nearly white lores, and with both species in the colour of its wings and underparts, but it possesses no character in common with *G. schistacea* which *G. interpres* does not also possess. On the other hand, it agrees with *Geocichla peronii* in the colour of its mantle, rump, and upper tail-coverts. It is unquestionably nearly allied to the latter species, which agrees with it and differs from every other species of the genus, except newly moulted examples of *Geocichla wardi*, in having the outer webs of the primaries (but not of the secondaries) conspicuously margined with white.

The adult male and female may be described as follows:—General colour of the upper parts orange-chestnut; lores white; eye-stripe black; lesser wing-coverts black; greater and median wing-coverts black, with large white terminal fan-shaped spots; primary-coverts black; scapulars and tertials black; secondaries nearly black, with a white patch near the base of the outer web; primaries dark brown, with the unemarginated portion of the outer webs margined with white; tail-feathers nearly black, the outer pair with a deep ($1\frac{1}{4}$ inch) terminal web of white, and the two next pairs more or less tipped with white; ear-coverts black, with a large white patch in the centre; chin, throat, and sides of the neck black, below which is a white collar; rest of the underparts white, with black crescentic spots on the breast and flanks; axillaries dark brown, with white bases; lower primary-coverts black; lower secondary-coverts white, with black bases.

Geocichline markings on inner webs of quills, white.

Bill black. Second primary intermediate in length between the sixth and seventh; tarsi, feet, and claws very pale; outer tail-feathers very slightly shorter than the longest; length of wing

4·61 to 4·35 inches, tail 3·25 to 2·95 inches, culmen 0·91 to 0·81 inch, tarsus 1·35 inch; bastard-primary projecting beyond the primary-coverts, its exposed portion measuring 1·05 to 0·95 inch.

Young in first plumage. Probably have pale shaft-streaks to all the small feathers of the upper parts, except the wing-coverts. An example in the British Museum still retains the pale shaft-streaks on the scapulars; the black on the throat is confined to two malar stripes, and the breast and flanks are much suffused with rufous.

The female probably resembles the male in colour.

The figure represents the type in the British Museum, and is life-sized. The same example was figured in 1872 by the late Marquis of Tweeddale (Trans. Zool. Soc. viii. pl. 6. fig. 2).

GEOCICHLA INTERPRES (*Temm.*).

KUHL'S GROUND-THRUSH.

Turdus interpres, Temm. Pl. Col. ii. no. 458 (1828, ex Kuhl, MSS.).
Turdus avensis, Gray in Griffith's Anim. Kingd. vi. p. 530 (1829).
Geocichla interpres, Hartl. Syst. Verz. nat. Samml. Ges. Mus. Bremen, p. 41 (1844).
Geocichla avensis, Hume, Stray Feathers, viii. p. 39 (1879).

G. tectricibus alarum mediis et majoribus albo terminatis: pileo et collo postico castaneis: dorso nigricanti-schistaceo: hypochondriis nigro maculatis.

Kuhl accompanied Van Hasselt to Java in 1820, and died there in 1821. One of the ornithological discoveries of that celebrated expedition was the present species of Ground-Thrush, which was described by Temminck in 1828 as "*Geocichla interpres*, Kuhl." Apparently this name was never published by Kuhl during his lifetime, and remained as a MS. title in the Leyden Museum.

The species likewise occurs in Sumatra and the Malayan Peninsula, as well as in Borneo, whence it has been recorded on two occasions. Dr. Adams procured a specimen at Sandakan (Elliot, Auk, 1890, p. 348), and Mr. A. H. Everett obtained another on Mount Kina Balu (Sharpe, Ibis, 1894, p. 538). It has also been met with in the Sulu Islands by Dr. Platen (J. f. O. 1890, p. 139). On Lombok it was found by Dr. A. R. Wallace forty years ago, and has been met with more recently in the same island by Mr. Doherty and Mr. Everett. The former obtained the species in June at about 2000 feet, and Mr. Everett procured a fine series of old and young birds (Hartert, Nov. Zool. iii. pp. 556, 593). Mr. Doherty likewise met with the species at Tambora, in the island of Sambawa, at 2000 feet (Hartert, *t. c.* p. 566). Dr. Vorderman records *G. rubiginosa* from the Lampongs, in Southern Sumatra (Nat. Tijdschr. Nederl. Ind. li. p. 235, 1891); but I fancy the present species is intended and not the true *G. rubiginosa*, which is *G. peronii* of Timor.

In 1829 a Thrush of this type was figured under the name of *Turdus avensis* by Gray in Griffith's edition of Cuvier's 'Animal Kingdom' (vi. p. 530). The figure was copied from a native drawing, and the bird was said to have come from Ava, but it has never since been found in any part of Burma. A specimen, apparently agreeing with the figure of *Geocichla avensis*, and differing from *G. interpres* in the absence of white wing-spots, was procured in the hills of the Native State of Rumbow, which lies to the east of the British possessions in Malacca. This specimen was identified by Mr. A. O. Hume as *Geocichla avensis*, but as it has now passed with the rest of that gentleman's marvellous collection into the cabinets of the British Museum, I am able to state that the bird is only *G. interpres*. It is in abraded plumage, but fortunately one of the greater wing-coverts still retains its white tip, and I have no doubt as to the correctness of my identification.

Kuhl's Ground-Thrush appears to form a connecting-link between my sub-generic groups *Geocichla* and *Geocichloides*, having the chestnut head and slaty-grey back of the former, combined with the white-tipped greater wing-coverts of the latter, but very little importance can be attached to this coincidence.

It is very easily diagnosed, as there are only four other species in the same group with spotted flanks. Its black breast and chestnut crown distinguish it at once from *Geocichla machiki*, leaving

Geocichla erythronota, *G. dohertyi*, and *G. leucolæma* as its nearest allies. Of these three species the chestnut backs of the two former, and the black lores and ear-coverts and the white throat of the latter, serve to distinguish them at once.

The adult male and female may be described as follows:—General colour of the upper parts dark slaty grey, sharply defined from the nape, which, like the crown and forehead, is brownish chestnut, brighter towards the nape; lores white; eye-stripe obsolete; lesser wing-coverts nearly black, the lower ones tipped with white; median coverts white; greater coverts nearly black, with large white terminal fan-shaped spots; primary-coverts black; tertials brown; secondaries and primaries brown, with slaty-grey edges to the unemarginated portion of the outer webs; tail-feathers brown, the outer pair broadly and the next pair narrowly tipped with white.

Ear-coverts black, crossed by a broad white band. Chin, throat, and upper breast black; rest of underparts white, suffused with buff on the flanks, and marked on the lower breast with large black fan-shaped terminal spots, which become obscure on the flanks; axillaries dark slaty grey, with white bases; lower primary-coverts nearly black; lower secondary-coverts white, with nearly black bases.

Geocichline markings on inner webs of quills, white.

Second primary intermediate in length between the seventh and eighth: "bill very dark brown; legs pinky white; claws horn-brown; iris chocolate" (*A. H. Everett*). Outer tail-feathers very slightly shorter than the longest.

Length of wing 4·25 to 4·0 inches, tail 2·4 to 2·2 inches, culmen 0·77 to 0·7 inch, tarsus 1·16 to 1·1 inch; bastard-primary projecting beyond the primary-coverts, its exposed portion measuring 1·0 to 0·85 inch.

Young in first plumage. All the small feathers of the upper parts dull chestnut with pale shaft-streaks, but the wing-coverts and quills scarcely differing from those of adults. On the underparts the black feathers of the adults are replaced by dull pale chestnut feathers with obscure black tips.

The Plate represents an example in the British Museum brought from Lombok by Dr. A. R. Wallace. The figure in the distance is a copy of the so-called Ava Thrush, figured in Griffith's edition of Cuvier's 'Animal Kingdom.'

The type in the Leyden Museum was figured in 1828 in Temminck's 'Planches Coloriées,' but the figure is not a very good one, the pale lores and the white band across the ear-coverts being omitted.

GEOCICHLA DOHERTYI, *Hartert.*

DOHERTY'S GROUND-THRUSH.

Geocichla dohertyi, Hartert, Novitates Zoologicæ, iii. pp. 555, 566, 593, pl. xi. fig. 3 (1896).

G. tectricibus alarum mediis et majoribus albo terminatis: notæo castaneo: pileo nigro: mento albo: gutture et præpectore nigris: hypochondriis nigro maculatis; regione paroticâ albâ, fasciâ nigrâ.

This fine species of Ground-Thrush was discovered by Mr. Doherty in the island of Lombok, where it was also met with by Mr. Everett. Mr. Doherty further obtained it in Sambawa, where it occurred in the mountains of Tambora at about 3000 feet.

The nearest allies of *G. dohertyi* are evidently *G. interpres*, *G. erythronota*, and *G. leucolæma*, but it is quite distinct from any of them. Mr. Hartert says that the species was found in Lombok at elevations of from 2000 to 5000 feet, where there were a good many young birds, and some of the old ones moulting. Nothing has been recorded of the habits of the species, but these can scarcely differ from those of other species of *Geocichla*.

Doherty's Ground-Thrush can be distinguished from all the other species of the chestnut-backed section of *Geocichla* by its black head, and from *G. leucolæma* by the white on the ear-coverts. It may be described as follows:—General colour of upper surface chestnut, a little brighter on the rump and upper tail-coverts; the crown of the head black; lores white, extending in a narrow line above the eye; sides of face and ear-coverts also white, the latter traversed by a broad streak of black, which runs from below the eye to the cheeks, which are black, like the throat and chest; the chin white; wing-coverts black, the median and greater series broadly tipped with white, forming a double wing-band; primary-coverts and quills black, with a narrow white margin to the fifth and sixth primaries; tail-feathers black, with a white spot at the end of the inner web; under surface of body white, the breast and sides orange-chestnut, with crescentic marks of black, less prominent on the flanks; under wing-coverts white, with black tips, the lower greater coverts black, broadly tipped with white.

Geocichline markings at the bases of the quills, white.

Second primary intermediate between the sixth and seventh: "bill blackish, with a pale base to the mandible; feet whitish; iris brown" (*W. Doherty*). Tail nearly square, the outer feather very slightly shorter than the longest.

Length of wing 4·2 inches, tail 2·75 inches, culmen 0·8 inch, tarsus 1·2 inch; bastard-primary about equal to the primary-coverts, its exposed portion measuring 0·95 inch.

The female is like the male, but a trifle smaller.

According to Mr. Hartert, the young birds are "of a darker chestnut above, with paler shaft-lines to the feathers; the feathers of the top of the head black, with longitudinal chestnut spots before the tip, the white everywhere washed with a pale ochraceous rust-colour; the underparts washed all over with ochraceous; the breast like the abdomen and with very little black; the feathers of the sides of the body with smaller black spots or only broad black fringes."

The figures in the Plate are drawn from one of Mr. Everett's Lombok specimens in the British Museum. [R. B. S.]

GEOCICHLA LEUCOLÆMA, *Salvad.*

SALVADORI'S GROUND-THRUSH.

Geocichla leucolæma, Salvad. Ann. Mus. Civic. Genov. (2) xii. p. 135 (1892).

G. tectricibus alarum mediis et majoribus albo terminatis: pileo et collo postico castaneis: dorso rufescenti-brunneo: hypochondriis nigro maculatis: regione paroticâ nigrâ.

This species was discovered by Dr. Modigliani in June 1891 at Bua-Bua, in the island of Engaño, on the west coast of Sumatra, about 200 miles north-west of Java. In the following year it was described by Count Salvadori as *Geocichla leucolæma*.

It belongs to the group of Ground-Thrushes containing *G. erythronota*, *G. interpres*, &c., but is easily distinguished from all of them by the black ear-coverts and sides of face. It appears to be most closely allied to *G. interpres*, as might have been expected from its habitat, but it has many characters in common with *G. erythronota*.

The type of this species may be described as follows:—Forehead and crown chestnut-brown, shading into orange-chestnut on the nape, but abruptly separated from the rest of the upper parts, which are russet-brown, most rufous on the upper tail-coverts; lores black; eye-stripe obsolete; lesser wing-coverts black; median and greater wing-coverts black, with large white terminal fan-shaped spots; primary-coverts black; tertials russet-brown; secondaries and primaries brown, margined with russet-brown on the outer webs; tail-feathers dark brown, the outer pair tipped with white; ear-coverts black; chin and throat white; cheeks, sides of the neck, and breast black; flanks suffused with olive-brown and marked with rather obscure crescentic black spots, which extend below the breast; rest of the underparts white; axillaries black, with white bases; lower primary-coverts black; lower secondary-coverts white, with black bases.

Geocichline markings on inner webs of quills, white.

Bill black. Tarsi, feet, and claws flesh-coloured.

Length of wing 3·85 inches; tail 2·55 inches; culmen 0·67 inch; tarsus 1·22 inch; bastard-primary projecting beyond the primary-coverts.

The Plate represents two life-sized figures of the type specimen, which was kindly lent to me by Count Salvadori.

GEOCICHLA CYANONOTA (*Jard. & Selby*).

WHITE-THROATED GROUND-THRUSH.

Turdus cyanotus, Jard. & Selby, Ill. Orn. i. pl. xlvi. (1828).
Geocichla cyanotus, Blyth, Cat. B. Mus. A. S. Beng. p. 163 (1849).
Geocichla cyanonotus, Seebohm, Cat. Birds Brit. Mus. v. p. 172 (1881).

G. suprà clarè schistacea: tectricibus alarum medianis albo terminatis: pileo aurantiaco-castaneo: pectore aurantiaco: gulâ albâ.

This species breeds in Central and Southern India at various elevations from 2000 to 4000 feet above sea-level, as far north as Behar (about latitude 24°), whence there are examples in the British Museum collected by Hodgson. Its range extends south-east to the Chota Nagpur Hills (Ball, Stray Feathers, 1874, p. 407), and south-west to Dapuli, south of Bombay (Vidal, in Hume's Nests and Eggs of Indian Birds, ii. p. 98). Further south it breeds in the Wynaad (Jerdon, Madras Journal, 1839, p. 254). It has been obtained in Malabar by Captain McPherson (Blyth, Cat. Birds Mus. As. Soc. p. 163) and in Travancore (Bourdillon, Stray Feathers, 1876, p. 398).

Mr. A. O. Hume, in his 'Nests and Eggs of Indian Birds'*, gives the following summary of the observations made by Indian field-naturalists on the nesting of the present species:—

"Mr. G. W. Vidal writes:—'This species is plentiful about Dapuli in the Southern Konkan. It breeds in the gardens about the station in June, July, and August. I have not myself taken the eggs of this species, but Mr. A. Jardine of Dapuli, who knows the birds well, and who at once recognized specimens in my collection, has taken a great many nests and has given me several eggs. He writes: "The nest is made of roots, twigs, and grass, with a good deal of mud. The egg-cavity is about five and a half inches in diameter, and from two to three inches deep. The nest is generally placed in the fork of a tree low down. The highest I ever saw was about fifteen feet from the ground in a kinjal tree, but they are mostly found in mango trees. When the Thrushes have young, they will not let any one go near the nest, but come flying at you, and peck like fun." The eggs vary greatly in colour and markings, presenting two or three very distinct types.'

"Mr. J. Davidson, when bird-nesting on the Kondabhari Ghât, referring to the events of the 14th July, says:—'I also found a nest containing three nearly full-grown young and one addled egg of *G. cyanonota*. This Thrush is not common here, and this seems, in this part of the country, about its northern limit, and it is only a migrant arriving in the rains; it is, however, common enough along the ridge running eastward from the Ghâts immediately north of Nasik.'

"Mr. J. L. Darling, Jun., to whom I am indebted for the eggs of this species, has favoured me with the following note in regard to its nidification. He says:—'The first nest that I found of the White-throated Ground-Thrush I took on Kulputty Hill, in the Wynaad (Malabar), at an elevation of about 2800 feet above the sea. It was placed in a small tree, in a fork about 11 feet from the ground, precisely in the same kind of situation as our Nilghiri Blackbird would choose. The nest, too, was very like a Blackbird's—a foundation of leaves and sandy clay, the main body of the nest

* Edit. E. W. Oates, vol. ii. pp. 98–100.

composed of roots, intermingled with a few twigs and a little grass, and the cavity lined with roots and slender petioles of the nelly-kai.

"'This nest contained three partly-incubated eggs. The birds were very shy; I visited the nest four times before I shot the male, and six before I shot the female. Directly I approached the nest the bird noiselessly dropped on to the ground and crept away through the brushwood. When disturbing them, I noticed that their call was low and sweet like that of the Blackbird when similarly disturbed.

"'On the 9th I found a second nest, this time about 500 feet lower, at the foot of the hill. It was built in a loquat tree, in a fork about 22 feet from the ground, and was in every respect similar to the last except that a little moss had been used in its construction. The birds were very brave, defending their nest against one of those thieves of Crow-Pheasants, and it was the noise they made that attracted me to the nest. Again I was struck with the great similarity of their notes to those of the Blackbird when its nest is being robbed. This nest contained four perfectly fresh eggs, of which I took three, and then watched the old birds return to the nest, where they broke the one egg I had left to pieces. They have, however, begun another nest in a jack-tree close by.

"'Their song is never heard except in the early mornings and evenings, and mostly in the latter. They go hopping about under the coffee-trees, and scratching up and turning over the leaves in search of food.'

"Mr. Rhodes W. Morgan, writing from South India, says:—'It breeds in the forests of the western coast in August and September, building in small trees. The nest is composed of grass, leaves, twigs, &c., with the usual clay foundation which is found in almost all Thrushes' nests, and is lined with fine roots and hairs. The eggs are from three to four in number, of a pale greyish-blue colour, thickly speckled with minute reddish-brown spots. The average dimensions are 0·95 inch in length by 0·77 in breadth.'

"The eggs strike one as rather small for the size of the bird. In shape they are moderately broad ovals, a good deal pointed towards one end. The shell is fine and fairly glossy, and some eggs have a really fine gloss.

"The general character of the egg is very Meruline. The ground-colour, very little of which in some eggs is visible, is a pale bluish or greenish white, and it is thickly freckled, blotched, and streaked with more or less brownish or purplish red. The markings are usually most dense at the large end, where they often form a bold confluent cap, and at this larger end a few lilac spots are commonly intermingled with the red markings. Some eggs have all the markings fine and very thickly spread over the whole surface. Others have them thick, bold, and blotchy all over the large end half, with only a few small spots scattered over the other half, and between these two types intermediate forms occur.

"The eggs measure from 0·9 to 1·08 in length, and from 0·71 to 0·79 in breadth, but the average of ten eggs is 0·99 by 0·75."

The White-throated Ground-Thrush is a forest bird and is very partial to bamboo-jungles. It feeds on the ground and generally perches low. Its principal food consists of insects—ants, cockroaches, beetles, &c.,—but it is also fond of stony fruit. It has rather a sweet song (Jerdon, Birds of India, i. p. 517).

The adult male may be described as follows:—Forehead, crown, and nape olive-chestnut; the rest of the upper parts greyish-blue, each feather with a darker centre; lores white; eye-stripe obsolete; lesser wing-coverts greyish-blue; median wing-coverts greyish-blue, with concealed brown bases and broad white tips; greater wing-coverts greyish-blue, with dark brown inner webs; primary-coverts greyish-blue, with dark brown inner webs; tertials greyish-blue; secondaries brown, margined with greyish-blue on the outer webs; primaries brown, margined more or

less with bluish-white on the outer webs; tail-feathers brown, suffused with greyish-blue on both webs of the centre pair and on the outer webs of the others; lateral tail-feathers with pale tips.

Ear-coverts white, crossed by two broad dark russet-brown bands; chin, cheeks, and throat white; the rest of the underparts buffish-chestnut, shading into white on the belly, thighs, and under tail-coverts; axillaries bluish-grey, with white bases; lower primary-coverts bluish-grey; lower secondary-coverts white, with bluish-grey bases.

Geocichline markings on inner webs of quills, white.

Bill black; second primary intermediate in length between the sixth and seventh; tarsi, feet, and claws flesh-coloured; outer tail-feathers 0·07 inch shorter than the longest.

Length of wing 4·3 to 4·0 inches, tail 3·1 to 2·8 inches, culmen 0·9 to 0·85 inch, tarsus 1·2 to 1·15 inch; bastard-primary projecting beyond the primary-coverts, its exposed portion measuring 1·0 to 0·85 inch.

The female is less bright in colour, the upper parts having a greenish-brown shade, with yellowish edges to the feathers, while the wings are shaded with green.

Young in first plumage appear to be unknown.

An example in my collection, apparently a female, though it is sexed a male, dated December 4th, has the terminal spots on the median wing-coverts rufous instead of white; and three males and two females in the British Museum, dated November, January, and April, have more or less obscure rufous tips to the greater wing-coverts; whilst three males in the same collection, shot in March and April, have more or less obscure white terminal margins to the greater wing-coverts. All these doubtless represent various stages of immaturity.

The White-throated Ground-Thrush is very distinct from all its allies, and it is difficult to say to which of them it is most nearly related. It has the head and neck of *Geocichla peroni* joined to the body of *Geocichla citrina*; but there can be little doubt that its affinities are much more with the latter than with the former species.

The Plate shows a life-sized male of this species in my collection, obtained in the Ahmednuggar district by S. B. Fairbank on the 22nd of May, 1875.

Jardine and Selby's figure of the type is also of life-size, and is a fairly good one, except that the artist has drawn the tarsus as scutellated in front, which of course is incorrect.

GEOCICHLA ALBIGULARIS, *Blyth.*

NICOBAR GROUND-THRUSH.

Geocichla albogularis, Blyth, J. A. S. Beng. xvi. p. 146 (1847); Hume, Str. F. ii. p. 221 (1874, pt.); Seebohm, Cat. Birds Brit. Mus. v. p. 175 (1881); Oates, Faun. Brit. Ind., Birds, ii. p. 142 (1890).

G. pileo et gastræo aurantiaco-castaneis: dorso et tectricibus alarum schistaceo-cinereis, immaculatis: gulâ albâ.

The present species was discovered in 1846 on the Nicobar Islands by Captain Lewis and the Rev. J. Barbe, and in the following year was described by Blyth as doubtfully distinct under the name of *Geocichla albogularis* (*l. s. c.*). The types are still in the Calcutta Museum (*cf.* W. L. Sclater, Ibis, 1892, p. 81).

In 1849, Blyth appears to have changed his opinion as to the specific validity of his *G. albogularis*, for he recorded it as the female of *G. innotata* (Cat. B. Mus. As. Soc. Beng. p. 163). Mr. A. O. Hume was the first to point out that Blyth was wrong in uniting these two species; but he himself was wrong in identifying it with the *Geocichla* of the Andamans (Stray Feathers, ii. p. 221), an opinion to which he adhered, even after the latter species had been separated as distinct by Tweeddale (*cf.* Hume, Stray Feathers, iv. p. 289). In 1881, however, after an examination of the specimens in the Tweeddale Collection, I came to the conclusion that the Andaman and Nicobar birds were distinct.

G. albigularis is an intermediate species between *Geocichla andamanensis* and *Geocichla innotata*, agreeing with them and differing from the other orange-headed species in having no white tips to the median wing-coverts. The white on the throat, a character which it shares with *Geocichla cyanonota*, serves to distinguish it from both these species.

The adult male may be described as follows:—

Entire head and sides of the neck rather dark orange-chestnut; the rest of the upper parts rather dark greyish blue, each feather with a darker centre; lores nearly white; eye-stripe obsolete; lesser wing-coverts greyish-blue; median wing-coverts greyish-blue; greater wing-coverts greyish-blue, with dark brown inner webs; primary-coverts greyish-blue, with dark brown inner webs; tertials greyish-blue; secondaries and primaries brown, more or less margined on the outer webs with greyish-blue; centre tail-feathers and outer webs of the others bluish-grey, the rest brown; ear-coverts dark orange-chestnut with white bases; underparts orange-chestnut, shading into white on the chin, throat, centre of belly, thighs, and under tail-coverts, the latter with grey patches on the outer webs; axillaries bluish-grey with white bases; lower primary-coverts bluish-grey; lower secondary-coverts white, with bluish-grey bases.

Geocichline markings on inner webs of quills, white.

Bill dark, paler at the base of the under mandible; second primary about equal to the seventh; legs, feet, and claws pale; outer tail-feathers 0·15 shorter than the longest.

Length of wing 4·2 to 3·9 inches, tail 2·9 to 2·6 inches, culmen 0·85 to 0·79 inch; bastard-primary slightly longer than the primary-coverts, its exposed portion measuring 1·1 to 0·8 inch.

The adult female appears to differ from the male in having the greyish-blue of the upper parts more or less suffused with green, most so on the mantle and least so on the upper tail-coverts.

The young in first plumage, of which there is a single example in the British Museum, differs from the young of *Geocichla citrina* in having the feathers of the mantle, the scapulars, and the greater and median wing-coverts dull brown, with rusty-coloured shaft-streaks.

The species is figured on the same Plate as *G. cyanonota*, the bird being represented of the size of life. The figure is drawn from a male specimen in my collection, obtained by Captain Wimberley in the Nicobar Islands in February 1874.

GEOCICHLA CITRINA (*Lath.*).

INDIAN ORANGE-HEADED GROUND-THRUSH.

Orange-headed Thrush, Lath. Gen. Syn., Suppl. i. p. 145 (1787).
Turdus citrinus, Lath. Ind. Orn. i. p. 350 (1790).
Turdus macei, Vieill. Nouv. Dict. d'Hist. Nat. xx. p. 270 (1818).
Turdus lividus, Tickell, J. A. S. Beng. ii. p. 577 (1833).
Petrocincla cyanota (nec Jardine), Hodgson in Gray's Zool. Misc. p. 83 (1846).
Petrocossyphus citrinus, Gray, Cat. Mamm. &c. Nepal pres. Hodgson, p. 79 (1863).
Geocichla citrina, Blyth, J. A. S. Beng. xvi. p. 145 (1847).
Geocichla layardi, Walden, Ann. & Mag. Nat. Hist. (4) v. p. 416 (1870).

G. pileo aurantiaco-castaneo : corpore subtùs pallidiore, aurantiaco : dorso clarè cinereo : tectricibus alarum mediis albo terminatis, majoribus dorso concoloribus.

Latham took his description of the present species from one of Lady Impey's drawings, and the bird has received but few synonyms.

The breeding-range of the Indian Orange-headed Ground-Thrush appears to extend throughout the Himalayas to Assam, and even to Tenasserim and as far as Tonka. In the cold season it migrates to Central and Southern India and Ceylon.

At Murree Colonel C. H. T. Marshall found the species breeding about the beginning of June, and Mr. Hume has received eggs from Kotegurh, to the north of Simla. At Masuri, Captain Hutton says, it arrives about the end of May at an elevation of 5000 feet and breeds in the month of June, returning to the plains in the autumn. Hodgson found it nesting in Nepal and Sikhim, at 4000 to 5000 feet elevation, in April and May. Near Darjiling it is not uncommon (Bulger, Ibis, 1869, p. 162), and a specimen collected in Bhutan by Pemberton is in the British Museum. Colonel Godwin-Austen has obtained the species in the Garo Hills (J. A. S. Beng. xxxix. pt. ii. p. 268, 1870). It has been found breeding in Burma, as Mr. Oates found a nest in a ravine near Pegu in May, and it also occurs in Tenasserim, where a considerable number remain during the whole year and breed; while its most southern range to the eastward seems to be Tonka, in the north of the Malay Peninsula.

In winter it visits the plains of the Indian Peninsula, but has not been found in the north-west, in the Punjab, Sind, Rajputana, or Gujerat. It appears to be a rare straggler to the west and south of the Peninsula, though not uncommon near Calcutta, according to Ball (Stray Feathers, ii. p. 408), and it has been met with in Behar by Hodgson and by Beavan in Manbhum (Ibis, 1865, p. 423). Tickell also records it from Borabun in Chota Nagpur (J. A. S. Beng. ii. p. 577). Jerdon says that it has been found in the jungles of the Eastern Ghauts, as well as in the forests of Central India (B. Ind. v. p. 518). Colonel Legge mentions three occurrences of the species in Ceylon (B. Ceylon, p. 457).

This species is strictly a forest bird, rarely, if ever, coming into the open, but is fond of shady gardens and bamboo-jungle. It feeds almost entirely on the ground, turning over the dead leaves in

search of insects and fallen berries. The song of the male in spring is described as sweet and loud, but at other seasons of the year the birds are said to be shy and silent.

The breeding-season in the Himalayas appears to be from April to July, according to climate, and Mr. Hume states that the species nests between 1500 and 5000 feet elevation. The nest he describes as "rather broad and cup-shaped, made of moss, grass, and very fine twigs or fir-needles, lined with fine moss-roots, and at times a little hair, measuring some 6 inches in diameter, and with a cavity about 3·5 inches broad and 1·75 inch deep. The nest is placed in some fork of a moderate-sized tree, in the case of all that I have seen, at no great height from the ground."

From Masuri, Captain Hutton writes:—"It breeds in June, placing the nest in the forky branches of lofty trees, such as oak and wild cherry. Externally it is composed of coarse dry grasses, somewhat neatly interwoven on the sides, but hanging down in long straggling ends from the bottom; within this is a layer of green moss, and another of fine dry woody stalks of small plants, and at the bottom a scanty lining of fine roots."

A nest sent by Mandelli from Darjiling is described by Mr. Hume as follows:—"Placed in the fork of a bamboo-cluster at about five feet from the ground, and is a very loose untidy structure, composed exteriorly of dead leaves, bamboo-spathes, a few twigs, and pieces of decayed bamboo, all wound together with vegetable fibre. The whole of the nest is composed of much the same materials, except that interiorly there are more chips of rotten bamboo and more vegetable fibre and very little dead leaf; there is a mere pretence of a lining, a dozen or so very fine wire-like twigs being wound round at the bottom of the cavity."

The eggs are three or four, rarely five, in number, of a pale greyish green, mottled and speckled with reddish brown, principally round the larger end. They vary in length from 1·1 to 0·82 inch, and in width 0·7 to 0·82 inch. The underlying spots are dark purple.

The present bird appears to be most nearly related to the Javan species, *Geocichla rubecula*, which differs from the Indian form in being darker in colour, both above and below. On the other hand, the Malay *G. innotata* appears to be as closely related to the Andaman species, *Geocichla andamanensis*, from which it principally differs in size and in the colour of the crown. *Geocichla albigularis* is also very closely related to *G. innotata*, but is smaller, and is easily distinguished by the white on its lores, ear-coverts, and throat. *Geocichla cyanonota* is much more distinct; the dark bands across the ear-coverts, only seen in immature examples of the other species, are retained through life, and, with the white throat, prevent any doubt attaching to its identification. *Geocichla everetti* is by far the most distinct, as it shows no trace whatever of any orange-chestnut on the crown, which is of precisely the same colour as the rest of the upper parts. On the other hand, the other Bornean species, *Geocichla aurata*, is extremely close to the Indian Orange-headed Ground-Thrush, principally differing from it in the apparently trivial points of being slightly darker on the upper parts, and of having the under tail-coverts slightly suffused with yellow.

The adult male may be described as follows:—

Entire head and neck orange-chestnut; the rest of the upper parts greyish-blue, each feather with a darker centre; lores orange-cinnamon; eye-stripe obsolete; lesser wing-coverts greyish-blue; median wing-coverts greyish-blue, with concealed black bases and broad white tips; greater wing-coverts greyish-blue, with dark brown inner webs; primary-coverts greyish-blue, with nearly black inner webs; tertials greyish-blue; secondaries and primaries brown, margined with greyish-blue on the unemarginated portion of the outer webs; centre tail-feathers and outer webs of the others bluish-grey, the rest brown, the lateral pair narrowly tipped with white; ear-coverts orange-chestnut; underparts buffish-chestnut, shading into white on the vent, thighs, and under tail-coverts; axillaries bluish-grey, with white bases; lower primary-coverts bluish-grey; lower secondary-coverts white, with bluish-grey bases.

Geocichline markings on inner webs of quills, white.

Bill dark brown, paler at the base of the under mandible. Second primary intermediate in length between the fifth and seventh; legs, feet, and claws flesh-colour; outer tail-feathers 0·1 inch shorter than the longest.

Length of wing 4·8 to 4·4 inches, tail 3·15 to 2·85 inches, culmen 0·95 to 0·8 inch, tarsus 1·35 to 1·2 inch; bastard-primary projecting slightly beyond the primary-coverts, its exposed portion measuring 1·1 to 0·9 inch.

The pattern of colour is precisely the same in the female, but in most cases the greyish-blue of the upper parts is more or less suffused with green, which apparently almost, if not quite, disappears with age, every intermediate stage being found in sexed females.

Young in first plumage of both sexes have the crown and nape much browner than in adults, and the mantle much more rufous, the feathers of all these parts having pale shaft-streaks. The median wing-coverts are dark brown, with large rufous fan-shaped terminal spots; and the greater wing-coverts are greyish-blue, with small rufous tips. There are two broad dark bars across the ear-coverts; the throat is rusty-white, surrounded by an obscure black gorget, and the breast and flank-feathers have obscure pale centres and obscure black tips; but the Geocichline markings on the inner webs of the quills are white, as in the adult.

If it be safe to generalize from two young males and one young female, it would appear that the males moult direct from the first plumage to the greyish-blue of the adult on the back, whilst the females moult to the greyish-green of the usual female dress.

The bird of the year of both sexes has apparently more or less distinct traces of rusty or white tips to the greater wing-coverts.

Females vary very much in the amount of green on the back and rump, and both sexes vary somewhat in the orange-chestnut of the crown and nape, which is occasionally, in what appear to be newly moulted examples, almost as dark as in typical specimens of *Geocichla rubecula*. Otherwise the colours in this species are remarkably constant, with the striking exception of the amount of white at the end of the median wing-coverts.

GEOCICHLA INNOTATA, *Blyth.*

MALAY GROUND-THRUSH.

Geocichla innotata, Blyth, J. A. S. Beng. xv. p. 370 (1846); Seebohm, Cat. Birds Brit. Mus. v. p. 151 (1881).

G. pileo et pectore aurantiaco-castaneis : tectricibus alarum schistaceis, minimè albo notatis : alis longioribus.

THE present species is an inhabitant of the Malayan Peninsula and Southern Tenasserim, and differs from its Indian ally, *G. citrina*, in having uniform wing-coverts, without the white tips which are a noticeable feature in the allied species. I regard it, however, as only a race of the latter, as the two forms appear to intergrade in Tenasserim; and it should, in my opinion, be called *Geocichla citrina innotata*. It should be noted, however, that Mr. E. W. Oates considers *G. innotata* to be quite distinct from *G. citrina* (Faun. Brit. Ind., Birds, ii. p. 141).

Both these races of Orange-headed Ground-Thrush are slightly larger than the other species of the same section, and have a wing of 4·4 to 4·8 inches.

G. citrina, which I regard as the typical form, differs from *G. andamanensis* in having white tips to the median wing-coverts, from *G. aurata* in having white under tail-coverts, and from *G. rubecula* in being paler both on the upper and under surface. The Malayan *G. innotata* differs from the two last-named species in having no white tips to the median wing-coverts. From *G. andamanensis* it further differs in having a more richly-coloured chin and a less brightly coloured belly. Both forms differ from *G. albigularis* and *G. cyanonota* in having no white on the throat.

On the same Plate as *G. citrina* I have figured an adult specimen of *G. innotata* from Malacca in my own collection.

GEOCICHLA ANDAMANENSIS, *Walden*.

ANDAMAN GROUND-THRUSH.

Geocichla albogularis (nec Blyth), Walden, Ibis, 1874, p. 138.
Geocichla andamanensis, Walden, Ann. & Mag. Nat. Hist. (4) xiv. p. 156 (1874); Seebohm, Cat. Birds Brit. Mus. v. p. 175 (1881).

G. pileo brunnescenti-castaneo: gulâ et pectore aurantiacis: tectricibus alarum clarè schistaceis, minimè albo terminatis: alis brevioribus.

The present species was first sent from the Andaman Islands in 1857 by Dr. von Liebig; and, on account of the absence of white tips to the median wing-coverts, was considered by Blyth to be the same as the Malayan *G. innotata* (J. A. S. Beng. xxvii. p. 270), an opinion still maintained by him in 1863 (App. to Mouat's Andaman Islands, p. 360). Beavan in 1867 regarded the two species as identical (Ibis, 1867, p. 325), as did also Valentine Ball in 1873 (Stray Feathers, i. p. 69).

In the following year the validity of the species was the subject of much controversy. Two distinguished ornithologists independently arrived at the conclusion that the Andaman bird was distinct from the Malay species, but they both failed to separate it from the Nicobar bird and recorded it as *Geocichla albogularis* (Walden, Ibis, 1874, p. 138; and Hume, Stray Feathers, 1874, p. 221). When Lord Walden wrote his paper for the 'Ibis,' he had not seen examples of the Nicobar bird; but before the year was out he obtained a series of skins from these islands and at once recognized their distinctness from the Andaman species, which he named *Geocichla andamanensis*.

The status of the species was further challenged by Hume, who certainly had a large series upon which to form an opinion. He stated that some Andaman examples had as much white on the throat as some of the Nicobar examples (Stray Feathers, 1876, p. 289); and when I ventured to point out that in the series in the British Museum and in the Tweeddale Collection the two species were easily distinguishable (Stray Feathers, 1880, p. 99), the assertion was made that in twenty per cent. of the examples from these two groups of islands it was impossible to tell by the colour of the throat from which group they came (Hume, Stray Feathers, 1880, p. 103). Thanks to the splendid generosity of Mr. Hume, his magnificent collection of birds has been added to the treasures in the British Museum, and I am confirmed in my opinion that there is no evidence that the two forms intergrade, an opinion in which I am supported by the latest authority on Indian birds (Oates, Fauna of British India, Birds, ii. p. 142).

The Andaman Ground-Thrush differs from all the other species of its sub-generic group, except *Geocichla innotata*, in combining the two characters—throat orange-chestnut and median wing-coverts uniform slaty grey (without white tips). It differs from *Geocichla innotata* in being smaller (wing 3·8 to 4·2 inches, instead of 4·5 to 4·8 inches), in having a little white on the chin, in being of a slightly darker chestnut on the flanks, while the orange-chestnut on the crown is slightly suffused with olive. The two species are very closely allied, but, until more evidence is produced that they intergrade, they must be regarded as specifically distinct. There is an example in the British Museum which is somewhat intermediate between the two, having little or no olive on the crown

and very little white on the throat. It is sexed as a male, and was procured on the 20th of February, 1874, by General Stewart on the Andaman Islands.

The adult male may be described as follows:—Entire head and neck orange-chestnut, suffused with brown on the forehead and crown; the rest of the upper parts greyish-blue, each feather with a darker centre; lores nearly white; eye-stripe obsolete; lesser wing-coverts greyish-blue; median wing-coverts greyish-blue, with dark bases; greater wing-coverts greyish-blue, with dark brown inner webs; tertials greyish-blue; secondaries and primaries brown, more or less margined on the outer webs with greyish-blue; centre tail-feathers and outer webs of the others bluish-grey; the remainder brown; ear-coverts orange-chestnut; underparts cinnamon-chestnut, shading into white on the chin, centre of belly, thighs, and under tail-coverts; axillaries bluish-grey, with white bases; lower primary-coverts bluish-grey; lower secondary-coverts white, with bluish-grey bases.

Geocichline markings on inner webs of quills, white.

Bill brown, paler at the base of the under mandible; second primary intermediate in length between the sixth and seventh; legs, feet, and claws pale flesh-colour; outer tail-feathers 0·15 inch shorter than the longest.

Length of wing 4·2 to 3·8 inches, tail 3·1 to 2·6 inches, culmen 0·85 to 0·8 inch, tarsus 1·25 to 1·2 inch; bastard-primary projecting some way beyond the primary-coverts, its exposed portion measuring 1·05 to 0·85 inch.

Females appear to differ from males in having the greyish-blue of the upper parts suffused with green, most conspicuously so on the mantle, and least so on the rump and upper tail-coverts. They also show traces of the two dark bands across the ear-coverts which are so conspicuous in *Geocichla cyanonota* at all ages, and in the immature birds of the other species in the sub-generic group.

There is one example of the young in first plumage in the British Museum. It very closely resembles the same plumage of *Geocichla citrina*, but the wing-coverts and the feathers of the mantle have rufous shaft-streaks.

The species is figured on the same Plate as *Geocichla rubecula*. The figure represents a male in my collection collected by Captain Wimberley at Port Blair in February 1874.

GEOCICHLA RUBECULA, *Gould*.

JAVAN GROUND-THRUSH.

Geocichla rubecula, Gould, P. Z. S. 1836, p. 7; Seebohm, Cat. Birds Brit. Mus. v. p. 174 (1881).

Turdus rubecula, Gray, Gen. B. i. p. 220 (1847).

G. pileo et pectore aurantiaco-castaneis: dorso clarè schistaceo: tectricibus alarum mediis albo terminatis, majoribus autem dorso concoloribus.

This Ground-Thrush is very closely related to its ally on the mainland, the Orange-headed Ground-Thrush, *Geocichla citrina*, and might almost be regarded as an island race of that species, but there is no evidence that they intergrade. On an average the Javan species is rather smaller than its ally: it is slightly darker in colour on the head and nape than typical examples of *Geocichla citrina*, and it further differs from that species in having the greyish-blue of the upper parts and the orange-chestnut of the underparts deeper in colour.

The Javan Ground-Thrush is intermediate between *Geocichla citrina* and *G. aurata*, and is so nearly allied to both of them that it doubtless owes its claims to specific rank to the fact of its isolation on the islands of Java and Bali. As it has white tips to the median wing-coverts, but no white on the throat, it can only be confounded with these two allied species. It is slightly smaller than *Geocichla citrina* (wing 4·4 to 4·0 inches), and is darker both on the upper and underparts. It differs from *Geocichla aurata* in being darker on the underparts and in having white under tail-coverts.

The species appears to be confined to the two islands above mentioned, and Javan specimens are not rare in collections. Dr. Vorderman records it from Mt. Salak in West Java (Nat. Tijdschr. Nederl. Ind. xlv. p. 47, 1885). Mr. Doherty has more recently found it in Bali (Hartert, Nov. Zool. iii. p. 537).

The adult male and female may be described as follows:—Entire head and neck dark orange-chestnut, the rest of the upper parts dark greyish-blue, each feather with a slightly darker centre; lores orange-chestnut; eye-stripe obsolete; lesser wing-coverts dark greyish-blue; median wing-coverts dark greyish-blue, with concealed black bases and broad white tips; greater wing-coverts dark greyish-blue, with dark brown inner webs; tertials dark greyish-blue; secondaries and primaries brown, the outer webs of the former margined with dark greyish-blue, and those of the latter, where unemarginated, with paler greyish-blue; centre tail-feathers and outer webs of the others dark bluish-grey, the rest brown; ear-coverts dark orange-chestnut; underparts orange-chestnut, shading into white on the vent, thighs, and under tail-coverts; axillaries bluish-grey, with white bases; lower primary-coverts bluish-grey; lower secondary-coverts white, with bluish-grey bases.

Geocichline markings on inner webs of quills, white.

Second primary intermediate in length between the sixth and eighth; legs, feet, and claws flesh-

colour; outer tail-feathers 0·1 inch shorter than the longest. "Bill black: feet pale brownish horn-colour; claws dark brown; iris deep umber" (*W. Doherty*).

Length of wing 4·4 to 4·0 inches, tail 3·0 to 2·8 inches, culmen 0·89 to 0·82 inch, tarsus 1·3 to 1·24 inch; bastard-primary projecting beyond the primary-coverts, its exposed portion measuring 1·0 to 0·9 inch.

Young in first plumage appear to be unknown. There are ten adult examples in the British Museum; they are unfortunately unsexed, and may possibly be all males, as none of them show any trace of green on the mantle. Possibly in this species the females are not suffused with green on the upper parts.

The figure on the Plate below that of *Geocichla andamanensis* represents a life-sized example obtained on the island of Java in 1863: it is in my own collection.

GEOCICHLA AURATA, *Sharpe.*

WHITEHEAD'S GROUND-THRUSH.

Geocichla aurata, Sharpe, Ibis, 1888, p. 478.

G. pileo aurantiaco-castaneo: pectore aurantiaco: dorso et tectricibus alarum majoribus schistaceis, mediis albo terminatis: abdomine imo et subcaudalibus albis, fulvo tinctis.

This Ground-Thrush was discovered by Mr. John Whitehead on Mount Kina Balu, in Northern Borneo, in May 1888, and the typical specimens are in my collection.

Whitehead's Ground-Thrush has the dark upper parts of *Geocichla rubecula* and the pale underparts of *Geocichla citrina*. It agrees with these two species, which are obviously its nearest allies, and differs from the other species of this little group, in combining the two characters—no white on the throat, but white tips to the median wing-coverts. It differs from every other species in the group in having the under tail-coverts suffused with yellow or buff.

I am indebted to Mr. Whitehead for the following note on the habits of this species:—

"It was not until my final expedition from the village of Melangkap to a spur that runs in a south-westerly direction from the great central ridge of Kina Balu, that I first met with the genus *Geocichla* in Borneo.

"We had passed the night in the village of the Kappar Dusans, and the following morning started at daybreak for the forest above the village. We camped about mid-day at an altitude of 3000 feet, in old forest, and, during the building-operations of our tent-house, an immature Ground-Thrush was seen hopping about quite close to the clearing we were busy making. Several days later, one or two adult birds were obtained. *Geocichla aurata* frequents the ground in thick forest, where it doubtless obtains all its food. The young at the time of my visit had probably only just left the protection of the paternal wing; and birds—I mean parent birds—at that period of their existence are often most uninteresting; so it would be difficult for me to write the domestic history of *Geocichla aurata*. When in Java I met with *G. rubecula*, which species also frequented the ground in the coffee-plantations where the low growth is cleared away by the natives. In November, the month of my visit, this Ground-Thrush often flew up into the lower branches of the large trees, whence it gave forth a short but very pleasing song."

The adult male and female do not differ in colour, and may be described as follows:—Entire head and neck orange-chestnut; the rest of the upper parts dark greyish-blue, each feather with a darker centre; lores orange-chestnut; eye-stripe obsolete; lesser wing-coverts bluish-grey; median wing-coverts bluish-grey, with concealed black bases and broad white tips; greater wing-coverts bluish-grey, with brown inner webs; primary-coverts bluish-grey, with dark brown inner webs; tertials bluish-grey; secondaries and primaries brown, more or less margined on their outer webs with bluish-grey; tail-feathers brown, suffused with bluish-grey on both webs of the central pair and on the outer webs of the adjoining three pairs, the two outermost pairs narrowly tipped with white; ear-coverts orange-chestnut.

Underparts buffish-chestnut, shading into white on the belly and thighs, and into pale yellow or

buff on the under tail-coverts; axillaries greyish-blue, with white bases; lower primary-coverts bluish-grey; lower secondary-coverts white, with bluish-grey bases.

Geocichline markings on inner webs of quills, white.

Bill dark brown; second primary intermediate in length between the seventh and eighth; legs, feet, and claws pale flesh-colour; outer tail-feathers 0·25 inch shorter than the longest.

Length of wing 4·5 to 4·2 inches, tail 3·25 to 3·15 inches, culmen 0·86 to 0·8 inch, tarsus 1·45 to 1·35 inch; bastard-primary projecting far beyond the primary-coverts, its exposed portion measuring 1·2 to 0·9 inch.

Young in first plumage, of which I have two examples in my collection, both sexed females, have the crown and nape much browner than in adults and the mantle much more rufous, the feathers of all these parts having pale shaft-streaks. The median wing-coverts are dark brown, with large rufous fan-shaped terminal spots, and the greater wing-coverts are greyish-blue with small rufous tips. There are two broad dark bars across the ear-coverts; the throat is rusty white, surrounded by an obscure black gorget, and the breast and flank-feathers have obscure pale centres and obscure black tips. The Geocichline markings on the inner webs of the quills are white.

Whitehead's Ground-Thrush appears to be an intermediate form between *Geocichla citrina* and *G. rubecula*, most nearly allied to the latter, but possessing certain characters which distinguish it from either of them. In the colour of its upper parts, in the slightly more rounded wing, and in the fact that males and females are similar in colour, it agrees with its Javan ally, but in the colour of the underparts below it comes nearest to the Indian species. On the other hand, the buff on the under tail-coverts is peculiar to the species.

GEOCICHLA EVERETTI, *Sharpe*.

EVERETT'S GROUND-THRUSH.

Geocichla everetti, Sharpe, Ibis, 1892, pp. 323, 431.

G. pectore aurantiaco-castaneo: notæo toto olivascenti-brunneo.

The present species, which is a very distinct one, was discovered by Mr. Charles Hose, in October 1891, on Mount Dulit in Sarawak, at an elevation of 5000 feet. It was named after Mr. Alfred Everett, the distinguished traveller-naturalist; and the latter gentleman has himself since met with the species on Mount Kina Balu in North-western Borneo, also in the month of October. It is probably confined to the mountains of Northern Borneo.

Nothing is known of the habits of Everett's Ground-Thrush, and its combination of colours is unusual in the genus *Geocichla*, while its long bill suggests an affinity to the members of the sub-genus *Zoothera*.

The species may be described as follows:—

General colour above uniform dark olive-brown; lores white, slightly mottled with brown; round the eye some whitish feathers, but no eye-stripe; wing-coverts olive-brown; primary-coverts and inner secondaries also olive-brown; secondaries brown, inclining to russet-brown on the outer webs; primaries brown; tail-feathers brown, suffused with olive-brown on both webs; ear-coverts dusky brown, with narrow white streaks, and with traces of a black line along the upper margin of the cheeks; cheeks orange-buff, mottled like the ear-coverts, and separated from the buffy-white chin and upper throat by a blackish malar stripe; remainder of the underparts orange-chestnut, shading into white on the belly; under tail-coverts orange-chestnut; axillaries black, with white bases; lower primary-coverts brown; lower secondary-coverts white, with brown bases.

Geocichline markings on the inner webs of the quills, white.

Bill nearly black. Second primary about equal to the seventh. Legs, feet, and claws brown. Outer tail-feather 0·15 inch shorter than the longest. Length of wing 4·4 to 4·15 inches, tail 3·0 inches, culmen 1·1 inch, tarsus 1·4 to 1·3 inch; bastard-primary projecting beyond the primary-coverts, its exposed portion measuring 1·1 inch.

The sexes are alike in colouring; but the female is a little browner, and the young have the same orange spots on the wing-coverts as are found in other species of *Geocichla*. The underparts are light orange, mottled with black edgings to the feathers.

The small orange spots at the end of the wing-coverts distinguish the young birds of the previous year from adults. The typical example has these tips to the greater wing-coverts, and is doubtless not fully adult.

The figures in the Plate are drawn from the typical specimen in the British Museum.

[R. B. S.]

GEOCICHLA MONTICOLA (*Vig.*).

LARGE BROWN GROUND-THRUSH.

Zoothera monticola, Vigors, P. Z. S. 1831, p. 172.
Turdus rostratus, Hodgs. Icon. ined. in Brit. Mus., Passeres, pl. 144. nos. 268, 269, and pl. 146. no. 269.
Geocichla monticola, Seebohm, Cat. Birds Brit. Mus. v. p. 161 (1881).

G. suprà schistaceo-brunnea, vix maculata: supercilio pallido nullo: pectore toto nigro maculato: hypochondriis sparsim maculatis.

This Ground-Thrush was described by Vigors from a specimen in the collection of the Zoological Society, which was afterwards figured by Gould in his 'Century of Himalayan Birds.' The typical specimen appears not to have been taken by the British Museum with the other types belonging to the Society's old Museum.

According to Gray (Cat. Mamm. & Birds of Nepal, 1846, p. 79), the present species was described by Hodgson as *Turdus rostratus* in the 'Quarterly Magazine' about the year 1826, from a specimen discovered by the last-named naturalist in Nepal. I have never seen the original description of *Turdus rostratus*, and the name must not be allowed to take precedence over that of Vigors, until the quotation in the 'Quarterly Magazine' can be verified. Until this is done, the name of *Turdus rostratus* must remain as a *nomen nudum*, being attached only to the unpublished drawings of Hodgson's in the British Museum.

The range of this species is not a very wide one, being confined to the Himalayas from the Sutlej valley to the Dafla Hills. There are examples in the British Museum obtained by Captain Stackhouse Pinwill near Simla, and in the Vienna Museum by Stoliczka (Pelzeln, Ibis, 1868, p. 313), while it has been recorded from Masuri (Hutton, Journal of the Asiatic Society of Bengal, xvii. part ii. p. 682), and Hodgson obtained it in Nepal. It is said to be common in Sikkim (Bulger, Ibis, 1869, p. 162) and at Darjiling (Blyth, Catalogue of the Birds in the Museum of the Asiatic Society, p. 160). Pemberton met with it in Bhutan (Horsfield & Moore, Birds in the Museum of the Hon. East-India Company, i. p. 192), and an example has been procured on the Dafla Hills Assam, which appears to be the eastern limit of its range (Godwin-Austen, Journal of the Asiatic Society of Bengal, xlv. part ii. 1876, p. 72).

This Ground-Thrush has been very fortunate in the name bestowed upon it by Vigors. So far as is known, it ascends the mountains up to 10,000 feet, a greater elevation than that attained by any other Ground-Thrush, so high, indeed, that its nest and eggs have not yet been found. It is not an uncommon bird in collections; but most of the skins have been brought down from the mountain-forests by native collectors, and I cannot find a single published record of its habits. Its migrations appear to be very limited, and it does not seem to have wandered far enough down the hills, even in the cold season, to have come under the personal observation of many ornithologists.

Fortunately, however, this bird was met with at Darjeeling, from 6000 to 7000 feet above the level of the sea, by Colonel Tickell, whose manuscript work in the library of the Zoological Society of London has been already referred to. Colonel Tickell describes it as skulking under bushes, but

easy of access: feeding entirely on the ground, hopping about quite silently, and seldom taking wing.

The adult male and female may be described as follows:—

General colour of the upper parts slaty-brown, shading into russet-brown on the crown and forehead; lores brown; eye-stripe obsolete; lesser wing-coverts slaty-brown; median and greater wing-coverts brown; primary-coverts brown; tertials brown; secondaries and primaries brown; tail feathers dark brown; ear-coverts brown, with pale shafts; chin and throat nearly white, separated from the cheeks, which are coloured like the ear-coverts, by rather obscure dark brown malar stripes; rest of underparts white, shading into slaty-grey on the flanks, sides of breast, and under tail-coverts, with dark brown terminal guttate spots on the breast-feathers, and with large white terminal wedges on the under tail-coverts; axillaries dark brown, with white bases and very narrow white margins; lower primary-coverts dark brown; lower secondary-coverts white with brown bases.

Geocichline markings on inner webs of quills, white, slightly suffused with buff.

Bill dark brown; second primary intermediate in length between the sixth and seventh; legs, feet, and claws pale brown; outer tail-feathers very slightly shorter than the longest.

Length of wing 5·75 to 5·1 inches, tail 3·7 to 3·1 inches, culmen 1·6 to 1·3 inch, tarsus 1·4 to 1·25 inch; bastard-primary projecting far beyond the primary-coverts, its exposed portion measuring 1·7 to 1·5 inch.

Young in first plumage are browner than the adults, and have buff shaft-streaks on the head and tawny-buff fan-shaped spots on the wing-coverts; the lores are tawny-buff, and the ear-coverts dark brown with tawny-buff shaft-streaks; throat and underparts orange-buff, mottled with black spots.

The chief figure in the Plate represents an adult example from my collection, obtained in 1873 by Mr. Mandelli near Darjiling. The young bird in first plumage was formerly in the Eyton Collection and is labelled "Himalayas." Both are drawn life-size.

The type was figured life-size in 1832 (Gould, Century of the Birds of the Himalaya Mountains, plate xxii.), but the figure leaves much to be desired. The shape of the bill is entirely wrong, and the artist has inserted some scutellations on the tarsi, which are not found in the species.

GEOCICHLA ANDROMEDA (*Temm.*).

SHORT-BILLED BROWN GROUND-THRUSH.

Myiothera andromeda, Temm. Pl. Col. ii. no. 392 (1826).
Myiophaga andromeda, Lesson, Traité d'Orn. p. 395 (1831).
Zoothera andromedæ, Hartl. Syst. Verz. nat. Samml. Ges. Mus. Bremen, p. 41 (1844).
Zoothera andromeda, Gray, Gen. B. i. p. 218 (1847).
Zoothera andromedon, Gray, Hand-l. B. i. p. 261. no. 3813 (1869).
Geocichla andromedæ, Seebohm, Cat. Birds Brit. Mus. v. p. 163 (1881).

G. suprà schistaceo-brunnea, fasciis nigris obscurè notata: supercilio pallido nullo: pectore cinerascente vix nigro maculato: hypochondriis albis, nigro squamatim notatis.

The present species was described by Temminck from specimens in the Museums of Leyden and Paris, and the habitat was given as the islands of Java and Sumatra. As regards its existence in the latter island, no evidence has since been forthcoming, and the species does not occur in Dr. Vorderman's list of the birds of Sumatra, nor was it found by Dr. Beccari in that island. It has also been recorded by Schlegel from Timor, but the evidence of its occurrence in that island has not been supported by exact details.

This Ground-Thrush has, however, been obtained in the island of Engaño by Dr. Modigliani, who procured specimens at Bua-Bua in May and June, 1891 (Salvad. Ann. Mus. Civic. Genov. (2) xii. p. 134, 1892), and it was met with in Lombok by Dr. A. R. Wallace (P. Z. S. 1863, p. 485), and more recently it has been procured in the same island by Mr. W. Doherty, who met with it at heights varying between 2000 and 3000 feet. It evidently breeds in Lombok, as Mr. Doherty procured young individuals of the species. Mr. Alfred Everett has likewise sent home several young birds from the same island, mostly from an altitude of 1500–4000 feet (Hartert, Novit. Zool. iii. p. 593).

Nothing has apparently been published on the habits of this Ground-Thrush.

The adult male and female may be described as follows:—

General colour of the upper parts slaty-brown, the smaller feathers margined with black; lores white, each feather narrowly margined with dark brown; eye-stripe obsolete; lesser wing-coverts brown; median and greater wing-coverts brown; primary-coverts brown, margined on the outer webs with slaty-brown; tertials brown; secondaries and primaries brown, slightly greyer on the outer webs; tail-feathers dark brown, the central and lateral pairs brown; ear-coverts dark slaty-brown, mottled with white, crossed by an obscure dark band; chin and upper throat nearly white, divided from the cheeks by obscure malar stripes, mottled with nearly black, and shading into slaty-grey on the breast, and into white on the belly; flank-feathers black, with diamond-shaped white centres; thighs brown; under tail-coverts white, edged laterally with grey; axillaries black, with white bases; lower primary-coverts black; lower secondary-coverts white, with black bases.

Geocichline markings on inner webs of quills, white.

Second primary about equal to the sixth. Outer tail-feathers 0·25 inch shorter than the longest.

"Bill black; feet blackish; iris deep brown" (*W. Doherty*).

Length of wing 4·9 to 4·8 inches, tail 3·05 to 2·8 inches, culmen 1·15 to 1·12 inch, tarsus 1·35 to 1·31 inch; bastard-primary projecting beyond the primary-coverts, its exposed portion measuring from 1·1 to 1·0 inch.

Young birds are blacker than the adults, and have linear shaft-streaks or triangular spots of orange-buff on the feathers of the back, especially distinct on the wing-coverts; the head is also streaked with linear spots of orange-buff; the fore-neck and chest are also mottled with orange-buff, the centres of the feathers being of this colour and their margins black. "Bill dusky or slaty-black; legs greyish-brown; iris chocolate-brown" (*A. H. Everett*).

The front figure on the Plate represents *Geocichla marginata*, and is drawn life-size from an example in my collection from Java, obtained from a dealer in 1884.

Temminck's figure of the type in the Leyden Museum leaves no doubt as to the species intended to be represented, though the artist has introduced some unnecessary scutellations on the tarsus, and has omitted the dark margins to the feathers of the upper parts.

GEOCICHLA MARGINATA (*Blyth*).

LESSER BROWN GROUND-THRUSH.

Zoothera marginata, Blyth, J. A. S. Beng. xxi. p. 141 (1847).
Geocichla marginata, Seebohm, Cat. Birds Brit. Mus. v. p. 162 (1881).

G. suprà olivascenti-brunnea, minimè transfasciata: supercilio pallido nullo.

This species was first described by Blyth in 1847 from examples obtained in Arakan by the late Sir A. Phayre in 1844. The types are still in the India Museum at Calcutta (*cf.* W. L. Sclater, Ibis, 1892, p. 81).

G. marginata is closely allied to *G. monticola* and *G. andromeda*, but it also greatly resembles the female of *G. sibirica*. Its diagnostic characters are the length of the bastard-primary, which extends far beyond the primary-coverts, and the olive-brown colour of the upper surface.

The range of the present species extends from the Eastern Himalayas south to Tenasserim. It has been found nesting in Sikhim (Oates's ed. Hume's Nests & Eggs Ind. B. ii. p. 109), and a fine series of specimens from this part of the Himalayas and Bhutan is in the Hume Collection. It was also obtained by Griffith in the Khasia Hills (Blyth, Ibis, 1872, p. 89), the specimen having been wrongly recorded as from Afghanistan by Messrs. Horsfield and Moore (Cat. B. Mus. E. I. Co. i. p. 192). Colonel Godwin-Austen met with it in the Western Khasia Hills (J. A. S. Beng. xxxix. part 2, 1870, p. 268). Mr. Hume also procured a specimen and saw others on the Limatol range, and two on the higher ranges of Eastern Manipur (Stray Feathers, xi. p. 124). Its original capture in Arakan has been alluded to above, and the species has likewise been found in Karen-nee, where Major Wardlaw-Ramsay discovered it at a height of from 1500 to 3000 feet (Walden, in Blyth's B. Burm. p. 100). Mr. Oates states that he never met with this Ground-Thrush in Pegu (Handb. B. Brit. Burm. i. p. 8), but it was obtained by Davison at Pahpoon and Mount Mooleyit in Tenasserim, though it was rare there (Hume, Stray Feathers, vi. p. 246); and Colonel Bingham has only procured one specimen in the Thoungyeen Valley (Stray Feathers, ix. p. 177). A specimen collected by Mouhot in Siam is in the British Museum.

So far as is known this species is a resident throughout its range, or its migrations are confined to the mountains where it breeds. It frequents low tree-jungle, and appears to be a very shy and silent bird. Colonel Tickell, in his manuscript work on Indian Ornithology previously mentioned as being in the library of the Zoological Society of London, states that he met with it on the muddy banks of a river, where it was busily searching for earthworms. Davison remarks that all the specimens he obtained were shot on the ground, where they were busy turning over dead leaves. He found on dissection that their food consisted of insects of various sorts and their larvæ, together with small land-shells.

Nests taken in Sikhim by Mandelli and Mr. Gammie at the end of May and the end of July were built from 8 to 10 feet from the ground, one of them in the fork of a slender tree and the other on a moss-covered leaning stem of a shrub which overhung a small stream in a densely shaded dell. The nest is described as a compact massive cup, the inside diameter rather more than 3 inches and the depth rather less than 2 inches. It was composed entirely of green moss felted very closely

together, without any foundation of mud, but with a thick lining of black or brown fibrous roots. The number of eggs in one case was three, pale greenish white, blotched, splashed, streaked and spotted with brownish red, principally at the larger end. The underlying markings are pale dull purple. They vary in length from 1·06 to 1·05 inch, and in breadth from 0·82 to 0·79 inch (Oates's ed. Hume's 'Nests and Eggs of Indian Birds,' ii. p. 109).

Mr. Stuart Baker, in his account of the nesting of birds in North Cachar, writes concerning the present species:—"By no means common, but found scattered throughout the district in the cold weather; in the hot weather and rains it is confined chiefly to the high ranges of the east, where it breeds in June and July. The first nest I ever took of this bird was rather abnormal in its construction, so I give the description of it which appeared at the time in the 'Asian.'

"The first nest I have ever seen of this bird was found on the 18th of June, 1890, and was taken from a thick tangle of cane-bush and creepers, in which it was placed at a height of some six feet from the ground. My attention was attracted to the bush in question by the bird flying out, and, on shooting it, I found it to be of this species. The nest was placed well inside the bush, and it was not until I had cut away a considerable amount of leaves and branches that I could get at it. It was a rather massive, shallow cup, about 4 inches in internal diameter by rather more than 1 inch in depth; the exterior materials were coarse fern-roots, grass, twigs, and dry stalks of plants, all intertwined with one another, and with here and there a dead leaf fastened in. The lining was of grass and fine fibres and was fairly thick.

"The eggs, which were three in number, are quite like the eggs of *G. citrina* in appearance; the ground-colour is a pale greeny grey, profusely speckled with a reddish-brown, the markings coalescing to the larger end and gradually decreasing towards the smaller.

"They were hard-set, and the shell was very fragile, otherwise much as in *G. citrina*.

"In size they are larger than the average egg of that bird, measuring 1·09×0·8, 1·08×0·76, and 1·08×0·75. The next nest taken was found on the 12th June, 1892. In shape, position, &c., it was just the same as that described above, merely being a shade smaller; the material used, however, was three-quarters moss mixed with a few twigs and roots, and lined with moss and fern-roots. This nest contained three eggs, of the same character as those already described, but having a pale yellow-buff ground-colour, and the blotches far redder and somewhat brighter. One egg was smashed before being measured, the other two were 1·14×0·82 and 1·1×0·81.

"Several nests taken in July this year (1893) were made entirely of living moss outwardly, then moss both dead and alive mixed with fern- and moss-roots, and with the lining of fine moss and fern-roots.

"In a few nests there were a certain number of fine bamboo-roots used next the lining; in one or two nests there were a few twigs, and in one three leaves and a bamboo-spathe. In size these nests average about 5·75 across and 2·25 deep, the inner cup being about 3·6×1·5."

The adult male and female may be described as follows:—General colour of the upper parts olive-brown, slightly darker on the crown and nape; lores white, each feather with a narrow brown margin; eye-stripe obsolete; lesser wing-coverts olive-brown; median and greater wing-coverts olive-brown, with small brownish-buff fan-shaped terminal spots; primary-coverts olive-brown, with dark brown inner webs; tertials olive-brown; secondaries brown, with russet-brown outer webs; primaries brown, with rusty-brown outer webs; tail-feathers dark russet-brown, the central and lateral pairs rather paler than the rest; ear-coverts white, with brown tips, crossed by an obscure brown band; thin and centre of throat nearly white, separated from the cheeks and sides of neck, which are mottled like the ear-coverts, by obscure malar stripes; rest of underparts brown, each feather with a large centre of dull white, which gradually becomes narrower, until it is lost on the flank-feathers; centre of belly white; under tail-coverts buffish-white with brown margins; axillaries brown with

buffy-white bases; lower primary-coverts brown; lower secondary-coverts buffy white with brown bases.

Geocichline markings on inner webs of quills, rusty-buff.

Bill nearly black; second primary intermediate in length between the sixth and seventh; legs, feet, and claws varying from pale flesh-colour to slaty-brown*; outer tail-feathers 0·25 inch shorter than the longest.

Length of wing 4·9 to 5·0 inches, tail 2·4 to 2·8 inches, culmen 1·35 to 1·45 inch, tarsus 1·1 to 1·2 inch; bastard-primary projecting far beyond the primary-coverts, its exposed portion measuring 1·05 inch.

Young in first plumage are browner than the adults and have mesial streaks or fan-shaped spots of orange-buff on the feathers of the back and wing-coverts; the breast and sides of body are ochreous-buff, mottled with rather broad black margins to the feathers, much more distinct on the sides of the chest.

The figure on the Plate to the right of that of *G. andromeda* represents a life-sized female in my collection; it was shot by Major R. G. Wardlaw-Ramsay at Karen-nee, 1500 feet above sea-level, on the 16th of March, 1874.

The species has not been figured before.

* There seems to be some variation in the colour of the legs of this species. The example figured is endorsed by Major Wardlaw-Ramsay on the back of the label "legs slaty brown with a pinkish tinge," agreeing fairly well with another statement "the legs and feet varied from dark brown to pale bluish-brown" (Hume & Davison, Stray Feathers, vi. p. 246), but quite at variance with the notes of a third authority, "legs, feet, and claws dusky white" (Bingham, Stray Feathers, ix. p. 178), which is corroborated by a fourth, "legs and feet very pale brownish fleshy" (Hume, Stray Feathers, xi. p. 124).

GEOCICHLA NÆVIA (*Gm.*).

VARIED GROUND-THRUSH.

Spotted Thrush, Lath. Gen. Syn. ii. p. 27 (1783).
Varied Thrush, Penn. Arctic Zool. ii. p. 337 (1785).
Turdus nævius, Gm. Syst. Nat. i. p. 817 (1788).
Turdus auroreus, Pallas, Zoogr. Rosso-Asiat. i. p. 448 (1811).
Orpheus meruloides, Swains. Faun. Bor.-Amer., Birds, p. 187 (1831).
Mimus meruloides, Less. Rev. Zool. 1840, p. 273.
Hesperocichla nævia, Baird, Review Amer. B. i. p. 12 (1864).
Geocichla nævia, Seebohm, Cat. Birds Brit. Mus. v. p. 176 (1881).

G. tectricibus alarum mediis et majoribus ochraceo terminatis: supercilio ochraceo: tectricibus supracaudalibus schistaceis.

The present species was described by Latham from examples in the collection of Sir Joseph Banks, obtained during Cook's third voyage, and the locality is given as George's Sound. In 1785 Pennant described his "Varied Thrush" from specimens procured in Nootka Sound: these were probably the identical ones which had served for Latham's description. In 1831 a bird obtained by Sir John Richardson at Fort Franklin was named by Swainson *Orpheus meruloides*, under the mistaken impression that it was allied to the Mocking-birds.

Very early in the present century Pallas received a female example of the species from the island of Kodiak, off the coast of Alaska. It was sent to him by his friend Captain Billings, and it was described by Pallas under the name of *Turdus auroreus*. This name has erroneously been applied to the female of *Geocichla sibirica* (*cf.* Gloger, Isis, 1828, p. 1041), a misapplication repeated in 1840 by Keyserling and Blasius (Wirb. Eur. pp. li, 178), partially corrected by Schlegel in 1844 (Revue Critique, pp. xl, 70), but not finally put right till 1872 by Cabanis in the 'Journal für Ornithologie' for that year (p. 157).

The oldest generic name for the present species would appear to be that of *Ixoreus* of Bonaparte (C. R. xxxviii. p. 31); but he, as Mr. Sclater tells us (P. Z. S. 1859, p. 331), mistook the South American *Myiotheretes rufiventris*, of the family Tyrannidæ, for *Turdus nævius*. *Ixoreus* must be detached from *G. nævius* altogether, and placed as a synonym of *Myiotheretes*.

The present species is placed in the genus *Hesperocichla* by the American naturalists, the characters being given by Dr. Stejneger (Proc. U.S. Nat. Mus. v. p. 465) as follows:—"Body stout, only very little spotted. Wing much as in *Turdus*, the second primary, however, being considerably shorter than the fifth. Bill more subulate, narrow at the base, with considerably curved commissure and inflated tomia; genys long, being longer than half the commissure, which only very exceptionally has a subterminal notch. The covering of the nasal fossæ is completely filled by feathers, and the openings of the nostrils concealed by a considerable number (about 7) of stiff bristles. Besides, the bristles along the gape are much more developed than in other Thrushes. Tarsus stout, of moderate length, shorter than two-eighths of the wing, but still longer than the commissure; outstretched legs falling far short of the tips of the tail. *Hesperocichla*

is as well defined a genus as any within the family, and needs not to be degraded to the lower rank of a sub-genus."

The Varied Ground-Thrush is a native of North America, and its range is summarized in the A. O. U. 'Check-list' as follows:—"Pacific coast of North America, from Bering Strait to Southern California. Accidental on Guadelupe Island, in Lower California, and in New Jersey, Long Island, and Massachusetts."

The breeding-range of the species extends from Alaska eastward to the Great Bear Lake and south to the Columbia River. Mr. E. W. Nelson observes (Nat. Hist. Coll. Alaska, p. 220, 1887):—"This handsome Thrush ranges north to the Lower Mackenzie River, where it nests. All the wooded country to the west and south of this, to the shores of Bering Sea, and along the coast of the North Pacific, south to Washington and Oregon, may be included in its breeding-range, thus including within its summer habitat both arctic and temperate climates, as well as the very dissimilar Canadian and North-west coast faunal provinces."

Mr. Nelson considers the present species "to be a regular and not rare summer resident in all the congenial portions of Northern Alaska, even within the Arctic Circle, and undoubtedly it extends its range as far to the north as *Merula migratoria*." He says that he has received specimens from the interior, north of Kotzebue Sound, as also from the coast-line of the same Sound, and that of Bering Sea, about the shore of Norton Sound. It arrives about the middle to the 25th of May, passing, like *M. migratoria*, directly to its breeding-ground, and returning to the south at the end of August and during September. Professor Tarleton H. Bean (Proc. U.S. Nat. Mus. v. p. 145, 1882) procured a specimen near the mouth of the Indian River, on the 1st of June, and says that the species was common in that locality. Messrs. Dall and Bannister (Trans. Chicago Academy, i. p. 276) record the species from various localities on the south coast of the Alaskan Peninsula, such as Kodiak Island, Cook's Inlet, the Admiralty Islands, and Sitka. From Kodiak Island Pallas received specimens from his friend Captain Billings, who says that the species nests there and remains all the winter [which statement may be doubted]. Richardson found the Varied Ground-Thrush nesting at Fort Franklin, on the western shores of Great Bear Lake, in lat. 65° 36′. Specimens in full breeding-plumage obtained by Mr. A. Forrer in Vancouver Island in November are in the Salvin-Godman Collection, but no record of its nesting there exists. Similar specimens were procured by J. K. Lord in British Columbia, on the western side of the Rocky Mountains. In Mr. Frank Chapman's account of Mr. Clark P. Streator's collections from British Columbia, we learn that the last-named naturalist found the species to be "a common fall and spring migrant." Mr. Streator observed it breeding on Mount Lehman (*cf.* Chapman, Bull. U.S. Nat. Mus. iii. p. 155). Mr. R. H. Lawrence states that at Gray's Harbour in Washington Territory the species is resident, and though most of the birds migrate south in winter, a few remain on the East Humptulips (Auk, ix. p. 47, 1892). Dr. J. C. Merrill says (Auk, v. p. 365, 1888) that at Fort Klamath, Oregon, this Thrush is seldom seen in autumn, but in March it is generally very abundant and tame. He shot one bird on the 13th of April. According to Mr. C. W. Swallow (Auk, viii. p. 396, 1891) the present species is common in Clatrop, Co. Oregon, about Astoria and the lowlands in winter, breeding back in the heavy timber on the hills. He found a nearly completed nest on the 27th of April, about four feet up in a small hemlock; the locality was on high land and heavily timbered.

Dr. J. G. Cooper, in his paper on the "Migrations and Nesting-habits of West-coast birds" (Proc. U.S. Nat. Mus. ii. p. 245), records this Thrush as being found in summer from the mouth of the Columbia River to lat. 65°, and wintering in California. At Santa Cruz (lat. 37°) it arrived in October and left about the 1st of April. At Haywood (lat. 37° 40′) it arrived about the 20th of October. In his work on the Ornithology of California, the same writer states that he had not himself seen the species south of the coast-range near Santa Clara, and then no later than April. He

thinks that it is very probable, however, that some breed in the dark evergreen forests towards the north, as they do near the mouth of the Columbia, though he did not see any about the summits of the Sierra Nevada in September, at lat. 39° and elevation 7000 feet.

In the Salvin-Godman Collection are specimens from the following localities in California:—Humboldt Bay, Nov. 25 (*C. H. Townsend*); Oakland, Dec. 29 (*H. W. Henshaw*); Walker's Basin, Nov. 5 (*H. W. Henshaw*); San Francisco (*F. Grueber*); Nicasio, Marin County, Jan. 4–31 (*H. W. Henshaw*); Greenwood Valley, El Dorado County, Dec., Jan. (*A. Forrer*).

Dr. C. Hart Merriam found it very common in March in the coast-range south of Monterey (Auk, xi. p. 258, 1894). Mr. Belding, in his "Notes on the Birds of Central California" (Pr. U.S. Nat. Mus. i. p. 395), writes:—"Arrives at Stockton in Central California (lat. 38°) about the middle of November and leaves in March or April. It arrived at Soda Springs (lat. 39° 11′, alt. 6000 feet) on October 1st. It is usually a common winter sojourner of the foot-hills, and also of the valley, in suitable localities, but I did not find it at Murphy's from the middle of November to May 1877 (lat. 38° 7′, alt. 2400 feet), though in the following November and December it was abundant there."

Dr. A. K. Fisher observes, in his account of the Death Valley Expedition (N. Amer. Fauna, No. 7, p. 147, 1893):—"Mr. Bailey saw several Varied Thrushes and secured a specimen at Monterey, Calif., the first week in October; he also found it common at Boulder Creek, Santa Cruz County, and at Auburn, Placer County, during the latter part of the month. Mr. Nelson observed a few in the lowlands about San Simeon, and found it common from Santa Maria south to Carpenteria and Santa Paula, where it was particularly numerous among the trees along the streams and in the cañon."

Xantus obtained the Varied Ground-Thrush at Fort Tejon in November, and a specimen from Fort Yuma is recorded by Baird in his report on Lieut. Ives's exploration of the Colorado. This is apparently the southernmost point of its winter range recorded from the continent of North America; but, according to the A.O.U. 'Check-list,' it has also been found on the island of Guadelupe.

The species occasionally wanders eastward on migration. Thus Professor Kellogg records its first occurrence in Kansas (Auk, xi. p. 260), a specimen having been obtained by Mr. H. W. Menke in Finney County on Oct. 17, 1891. In the Henshaw Collection is a specimen of an adult male bird procured at Carson, Nevada, by Mr. H. G. Parker. According to Prof. Elliott Coues (B. Color. Valley, p. 20, 1878), four specimens have been captured in the Eastern United States, viz., one in New Jersey (*Cabot*), one at Hoboken, New Jersey (*teste Lawrence*), one at Islip, Long Island (*teste Lawrence*), and one at Ipswich, Mass., in December (*Maynard*).

Dr. Cooper gives the following notes on the habits of the species as observed by him in Oregon and Washington Territory:—"The Varied Thrush or Western Robin is common during winter, and I think that a few remain near the coast all summer, as I have seen them in the dark spruce forests in June and July. They are much more shy and retiring than the Robin (*Merula migratoria*), and differ very much in song, which, as I have heard it, consists only of five or six notes in a minor key, and in a scale regularly descending. It is commonly heard in the tops of the trees, and in summer only in the densest of forests. In winter they associate with the Robins and feed much on the ground, sometimes coming around houses in cold weather." Dr. Suckley continues with his observations in the same volume:—"In winter it is a shy bird, not generally becoming noticeable in the open districts until after a fall of snow, when many individuals may be seen along the sand beaches near salt water. They are at such times tame and abundant, at least sufficiently so for any ordinary shot to obtain a dozen specimens in a forenoon. I suppose they are driven out of the woods during the heavy snows by hunger. The species may frequently be found in company with the Robin (*M. migratoria*), with which it has many habits in common. In the winter it is a very silent bird, quite tame, allowing near approach; flying when the intruder comes too near, but alighting

on the ground again a short distance in front. It appears to be fond of flying by short stages in a desultory manner, sometimes alighting on the ground, at others on fences, bushes, or trees."

Mr. L. Belding writes:—"Its alarm-note is a short 'chook,' its call a prolonged, nearly monotonous 'chee' or 'yee,' and I have heard it sing sweetly about March 1st. I once mistook its call for the bleating of a distant lamb, although the bird was not far from me."

The following note on the habits of the species in Northern California is given by Mr. C. H. Townsend:—"I first saw the Varied Thrush while 'a hunting of the deer' along the Lower McCloud River early in November, 1883, often finding it loitering under the low shrubbery and among the fallen tree-trunks in the deepest and wildest cañons where the sunlight could not penetrate. In such quiet places I used to rest sometimes when making a long round, and the stillness would often be broken by a note of alarm from this bird when it had discovered so unusual an apparition as a human being in its secluded retreats. It would fly into some pine near by and earnestly regard the motionless forms of the hunter and his dog, and if given no further cause for alarm, would remain in the vicinity quietly continuing the inspection from various points of view."

The nesting-habits of the species are summarized by Mr. E. W. Nelson:—"Dall secured a nest and two eggs of this bird near Nulato, May 22, 1867, and states that the birds arrive there about May 15, and frequent the vicinity of the smaller streams. He found its nests along the Yukon to Fort Yukon and near Nulato.

"According to this observer, the Varied Thrush was not very common at Nulato, nor, according to the information I have been able to secure, is it numerous anywhere in the northern portion of the Territory, though generally distributed and of regular occurrence. A few pairs breed every summer in the alder and willow thickets about the shores of Norton Sound, and a single specimen was brought to me from latitude 68°, north of Kotzebue Sound. I had no opportunity of observing the little-known habits of this interesting species, but learned that it generally arrives before the ground is free from snow, during the middle and last of May, and leaves before the cold storms of autumn commence. The nest found by Dall was built in the midst of a large heap of rubbish in a group of willows, about 2 feet above the ground, and close to the river-bank. The eggs were bluish, speckled with brown."

Adult male. General colour above slaty-grey, darker on the head; lores black like the ear-coverts; a broad eye-stripe orange-chestnut, extending to the nape, but not in front of the eye; lesser wing-coverts slaty-grey; median wing-coverts black, with large fan-shaped, terminal spots of orange-buff; greater wing-coverts slaty-grey, with large spots of orange-buff; primary-coverts dark brown, with an ashy mark in the middle of the outer webs; inner secondaries brown, with ashy-buff margins to the outer webs and obscure pale tips; primaries and secondaries brown, with some orange-buff on the margins, and with orange-buff bases to the outer webs of the primaries; tail brown, suffused with slaty-grey on both webs of the central feathers, the others externally edged with slaty-grey; at the ends of the tail-feathers a small spot of white, with a terminal wedge on the external feather, about half an inch in length; feathers below the eye and ear-coverts black to the sides of the neck.

Under surface of body deep orange-chestnut, with a broad black collar across the fore-neck; sides of body with crescentic grey marks; flanks slightly tinged with grey; abdomen white; under tail-coverts white, with dusky-brown bases and lateral margins of orange-buff; axillaries pale slaty-grey, with white bases; lower primary-coverts slaty-grey; lower secondary-coverts white, with slaty-grey bases.

Geocichline markings on the inner webs of the quills, white.

Adult female. Different from the male, and lacks the black gorget, which is replaced by a more or less distinct band of pale grey, which is plainer in the breeding-plumage. The slaty-grey upper

surface is suffused with brown, especially on the head, and the tail is browner. There is also more white on the belly than in the male, and the flank-feathers are white with ashy margins. In winter plumage the females are much browner than the males, and the pectoral collar is very indistinct.

Young males appear to resemble the females, but are darker and more slaty-grey, and the black collar on the fore-neck is gradually assumed; in specimens after the first autumn moult it is often interrupted and consists only of black crescentic markings.

The question whether *Geocichla nævia* has spotted young or not appears to be at present undecided. Professor Elliott Coues (B. Colorado Valley, p. 15) writes:—"The young are like the adult female. Upper parts in many cases with a decided umber-brown wash. No speckled stage, like that of the very young Robin, has been observed, though August specimens have been examined. In the young male the black pectoral bar is at first indicated by interrupted blackish crescents on individual feathers. Young females sometimes show scarcely a trace of the collar. At all ages the markings of the head and wings are much the same." On the other hand, Dr. Stejneger (Proc. U.S. Nat. Mus. v. p. 466) observes:—"It is only apparently, as this statement seems to indicate, that the young bird is not speckled at all, thus differing from all the other Thrushes, and wanting the most essential character. I have now before me a specimen (U.S. Nat. Mus. no. 45897: Sitka, August, 1866) which differs considerably from the adult female. The under surface is of a much duller colour, without white on the belly and under tail-coverts. All the feathers of the chin, throat, and upper breast have well-marked blackish edges, giving these parts a scaly appearance. In the adult female the feathers forming the collar are almost uniformly dark, the edges, if any, being lighter, while the feathers of the above-mentioned parts in the young bird are grey and downy on their basal half, then ochraceous yellow and, finally, narrowly edged with blackish. The feathers of the upper parts of the young bird have no light centres as usual among the Thrushes, except on the sides of the neck and on the head, where the middle of the feathers are more or less conspicuously marked with a lighter spot. Finally we have a very striking difference between the adult and the young, showing the common Thrush-like feature of the plumage of the latter, the smaller wing-coverts having wedge-shaped, rusty spots towards the tip and dark edgings, while in the adult bird they are absolutely uniform in colour. It will thus be seen that the speckled stage is not altogether wanting in this genus, although it may be admitted that it is not so conspicuous as in the young of *M. migratoria*. This fact seems to me to strengthen my view that the present bird, notwithstanding a certain resemblance of the predominating colours and their tone, is widely remote from the last-named species, in the neighbourhood of which it has been placed by many authors."

The figures in the Plate represent an adult male in the Seebohm Collection obtained in the Greenwood Valley in Eldorado County by Mr. A. Forrer on the 17th of December, and a female procured by the same collector in the same locality on the 28th of the same month. The male is figured of the size of life, and the female a little smaller.

[R. B. S.]

GEOCICHLA WARDI (*Jerdon*).

PIED GROUND-THRUSH.

Turdus wardii, Jerdon, J. A. S. Beng. xi. p. 882 (1842).
Turdus picaoides, Hodgs. in Gray's Zool. Misc. p. 83 (1844).
Oreocincla micropus, Hodgs. in Gray's Zool. Misc. p. 83 (1844).
Zoothera melanoleuca, Hartl. Syst. Verz. Samml. Mus. Bremen, p. 42 (1844).
Merula wardii, Blyth, J. A. S. Beng. xvi. p. 146 (1847).
Turdus micropus, Gray, Gen. B. i. p. 218 (1847).
Cichloselys wardi, Bp. C. R. xxxviii. p. 5 (1854).
Turdulus wardii, Jerdon, Birds of India, i. p. 520 (1862).
Oreocincla pectoralis, Legge, Stray Feathers, iv. p. 244 (1876).
Geocichla wardi, Seebohm, Cat. Birds Brit. Mus. v. p. 178 (1881).

G. tectricibus alarum, tectricibus supracaudalibus, et rectricibus lateralibus albo vel ochraceo terminatis.

The Pied Ground-Thrush breeds in the Himalayas up to 6000 or 7000 feet and is found from the Sutlej Valley to Sikhim and Bhutan. Its winter home is in the hills of Southern India and Ceylon (Oates, Faun. Brit. Ind., Birds, ii. p. 137). Stoliczka obtained a specimen at Sashan (Pelzeln, Ibis, 1865, p. 313), and, according to Beavan, it is very abundant near Simla (Ibis, 1870, p. 324). Specimens obtained by him in July are in the Tweeddale Collection in the British Museum, and the Hume Collection also contains examples from Simla, procured on the 28th of September. Specimens were shot by Capt. Hutton at Masuri (Blyth, Cat. B. Mus. As. Soc. p. 163), and it is said by Brooks to be not uncommon there (Str. F. iii. p. 162, 1875). Specimens in the Hume Collection from Masuri bear the dates of July and October. In the same collection are examples from Naini Tal procured at an elevation of 5000 feet in May and October, and also some from Khati in Northern Kumaon in May. Hodgson found it breeding in Nepal, Mandelli's collectors obtained it in Native Sikhim in April, and Major Bulger states that it is not uncommon near Darjiling (Ibis, 1869, p. 162). A female from the lower hills in the Bhutan Dooars, obtained by Mandelli's hunters in April 1873, is in the Hume Collection. In North Cachar Mr. Stuart Baker regards the species as rather rare, and has only found it nesting on one occasion (Journ. Bombay Nat. Hist. Soc. ix. p. 138).

In Southern India the Pied Ground-Thrush is only known as a winter visitant. Jerdon records it from Nellore in the Carnatic, and Major Lloyd has recorded it from the Konkan. The type specimen was procured by Dr. S. N. Ward on the tableland of Mysore, immediately below the Segore Pass (Jerdon, *l. c.*). Davison records it as a winter visitor to the Nilgiris (Str. F. x. p. 374, 1887), and examples procured by him in March and April are in the Hume Collection.

In Ceylon, according to Colonel Vincent Legge, "it is a cool-weather migrant to the hills, arriving late, during the month of November, and leaving again at the latter end of March or early part of April. It does not appear to locate itself in the same localities every year, or else its numbers vary considerably, for in some seasons it is almost wanting in districts in which it has commonly been observed. It is found in most of the upper regions of the Kandyan Province, from the altitude of Nuwara Elliya down to about 2800 feet; but it is most common between 3000 and

4000 feet in the Knuckles ranges, Kotmalie, Dickoya, Uda Pusselawa, Uva, and Haputale. In some years it occurs in considerable numbers between the Elephant Plains and Kandapolla, Mr. Watson informing me that he has seen it in flocks in the patna-woods near Ragalla. In November and December it has been several times seen in Hakgala Gardens, to which it is attracted, with many other species, in search of the insectivorous food harboured in the bare soil beneath the conifers and other choice trees with which this beautiful spot abounds. I have no doubt that it finds its way, in small numbers, into all the forests of the main range." The species appears to stay in Ceylon as late as May, as the type of *O. pectoralis* of Legge was obtained on the 18th of that month. The voice of this bird, as described by Mr. W. E. Brooks, during the nesting-season is "a strange one of two notes and quite unmusical." Very little has been written about its habits, but the following account is given by Colonel Vincent Legge in his 'Birds of Ceylon' (p. 454):—"This species frequents the outskirts of forest, patna-jungle, detached woods, and frequently visits therefrom the gardens of the planters, in which its frugivorous habits cause it to do a considerable amount of mischief. It is very partial to mulberries, and, in fact, does not seem to turn aside from any fruit grown in the hills of Ceylon. Mr. Bligh, who has seen it frequently in Kotmalie and Haputale, tells me that it collects in scattered flocks to feed on the fruit of the guava and wild fig, uttering a chirping note while so doing. Young males, which Mr. Thwaites observed in the Hakgala Gardens, were very shy, flying up from the ground, when flushed by him, into low trees, and then escaping into the surrounding jungle; they frequented the manure-heaps near his bungalow, and had a low cry like that of a young Blackbird."

The nest is placed in the fork of a tree, on a foundation of dead leaves and mud, and is chiefly composed of moss, lined with thin roots. Externally the nest is about 6 inches in diameter by $2\frac{1}{2}$ inches in height; the internal measurements are 3 to $3\frac{1}{2}$ inches in width and $1\frac{3}{4}$ to 2 inches in depth. The eggs are usually four in number, pale bluish-green, blotched, spotted, and streaked with brownish-red, principally at the larger end. The underlying markings are pale purple. They measure from 1·06 to 0·99 inch in length by 0·76 to 0·70 inch in breadth (Oates's ed. Hume's Nests and Eggs of Indian Birds, ii. p. 97).

Geocichla wardi is most nearly allied to *G. sibirica*. The males are, of course, very different in colour, but they both have much white on the tail, and—a much more important character—they both have the brilliant white eye-stripe. The females of these two species, on the other hand, are so much alike that it requires close examination to distinguish between them. This may, however, be easily done by noting the spots on the wings and upper tail-coverts: those on the latter are never found in the Siberian species, and those on the former are confined to immature examples. The male of *G. schistacea* resembles that of *G. wardi* in its black throat and breast and in its white eye-stripe, but as the female is unknown it is impossible to speak confidently of the relationship of these two species.

In the adult male the general colour of the upper parts is black, with white tips to the feathers of the rump and the upper tail-coverts; lores black; eye-stripe white, broad, and extending nearly from the nostrils to the nape; lesser wing-coverts black, tipped with white; median and greater wing-coverts black, with white terminal fan-shaped spots; primary-coverts black, with a broad white patch on the outer webs; tertials black, with white terminal fan-shaped spots; secondaries black, with white tips to the outer webs; primaries nearly black, with white margins on the central portion of the outer webs of the 3rd, 4th, 5th, and 6th; tail nearly black, with more or less white at the end of the inner webs of all except the central pair, and at the base of the outer webs of one or two of the lateral pairs; ear-coverts black; underparts above the centre of the breast black, below white, excepting the flank-feathers, which are black with white margins and shafts; axillaries black, with white bases and narrow white margins; lower primary-coverts dark brown; lower secondary-coverts white, with black bases.

Geocichline markings on inner webs of quills, white, slightly suffused with buff; second primary intermediate in length between the fifth and sixth.

Bill ochre-yellow, the tip of the upper mandible black; legs, feet, and claws fleshy-ochre; iris brown (*A. O. Hume*).

Outer tail-feathers 0·15 inch shorter than the longest.

Length of wing 4·6 to 4·4 inches, tail 3·3 to 3·1 inches, culmen 1·1 to 0·92 inch, tarsus 1·1 to 1·0 inch; bastard-primary shorter than the primary-coverts, its exposed portion measuring 0·8 to 0·7 inch.

The female is very different from the male. The general colour of the upper parts is olive-brown, and there are no white tips to the feathers of the rump, but only to the upper tail-coverts; lores dark brown; eye-stripe buff, mottled with brown, and narrow; wing-coverts olive-brown, and the spots buff. The black of the quills is replaced by olive-brown, and the white markings by buff. The black of the tail is replaced by olive-brown, and the white at the base of the lateral feathers is absent. The general colour of the underparts is white, suffused with buff above the centre of the breast; the feathers on the cheeks and throat, and the ear-coverts, are tipped with brown, and those on the upper breast are squamated or margined with brown; the lower breast and flanks are covered with dark brown crescentic spots, and under tail-coverts are margined at the sides with brown. The bill is brown.

Young after the first moult resemble the adult female, but have white or buff tips to the scapulars, inner secondaries, and wing-coverts, as well as the upper tail-coverts. A young bird, procured at Simla in July by Capt. Beavan, has the throat and fore-neck blackish, with broad whitish mesial streaks on the feathers. It is marked a female, but seems to me to be a young male.

The Plate represents an adult male obtained on the 17th of May, 1875, at Khati in North Kumaon; and an adult female obtained on the 3rd of January, 1883, at Kamboda in Ceylon. Both examples are in my collection and are figured life-size.

The type, a male, was indifferently figured, half the size of life, as long ago as 1847 (Jerdon, Illustrations of Indian Ornithology, plate viii.).

GEOCICHLA SCHISTACEA, *Meyer*.

WHITE-EARED GROUND-THRUSH.

Geocichla schistacea, Meyer, Zeitschr. ges. Orn. i. p. 211, Taf. viii. (1884).

G. axillaribus omninò albis: supracaudalibus uropygio concoloribus: superciliis et regione paroticâ albis.

The White-eared Ground-Thrush was discovered in 1884 on the Island of Timor-Laut by Mr. Riedel, who sent examples to Dr. A. B. Meyer, the Director of the Royal Zoological Museum at Dresden, by whom the species was named (*l. c.*). The type is in the Dresden Museum.

The White-eared Ground-Thrush appears to be intermediate between *G. sibirica* and *G. wardi*, perhaps most nearly related to the latter. Unfortunately the female is unknown, but probably the white axillaries, a character only shared by *G. pinicola*, are common to both sexes. We may also assume that the upper tail-coverts, whether they be slaty-grey or brown in the female, will never show pale tips. If this assumption be true, the following will be a safe diagnosis for the species: axillaries entirely white; upper tail-coverts uniform in colour throughout.

The adult male may be described as follows:—General colour of the upper parts slaty-grey, shading into black on the forehead; lores black; eye-stripe very conspicuous, broad and white, reaching from the base of the bill well behind the eye; lesser wing-coverts slaty-grey; median coverts black, tipped with white on both webs; greater wing-coverts black, tipped with white, broadest on the outer webs; primary-coverts black; quills brown, margined with slaty-grey on the outer webs; tail-feathers blackish-brown, the outer pair with a deep terminal wedge of white, the next pair with a small terminal spot of white; ear-coverts white; cheeks, chin, throat, and upper breast, black; rest of the underparts white, spotted on the lower breast with black terminal fan-shaped markings, and suffused with grey on the flanks; axillaries white, with very obscure traces of black on the terminal half; lower primary-coverts mottled with black; lower secondary-coverts white, with black bases.

Geocichline markings on inner webs of quills, white.

Bill black; second primary about equal in length to the seventh; legs and feet yellowish; outer tail-feathers 0·15 inch shorter than the longest.

Length of wing 4·0 to 3·6 inches, tail 2·75 to 2·56 inches, culmen 0·94 to 0·86 inch, tarsus 1·06 to 0·98 inch; bastard-primary extending 0·3 inch beyond the primary-coverts, its exposed portion measuring 0·95 inch.

The Plate represents one of the co-types in my collection and is drawn life-sized. The type in the Dresden Museum has been figured, also of the size of life, by Dr. Meyer (Zeitschr. i. Taf. viii.). It is also well figured by Dr. Bowdler Sharpe in Gould's 'Birds of New Guinea' (vol. iii. pl. i.).

GEOCICHLA PINICOLA (*Sclater*).

MEXICAN GROUND-THRUSH.

Turdus pœcilopterus, Licht. MSS. in Mus. Berol. (nec Vig.).
Turdus pinicola, Sclater, P. Z. S. 1859, p. 334.
Geocichla pinicola, Seebohm, Cat. Birds Brit. Mus. v. p. 179 (1881).
Ridgwayia pinicola, Stejneger, Proc. U.S. Nat. Mus. v. p. 460 (1883).

G. tectricibus supracaudalibus albis : axillaribus omninò albis.

This aberrant form of Ground-Thrush appears to have been first known from specimens brought by Deppe to the Berlin Museum, where Lichtenstein bestowed on them the name of *Turdus pœcilopterus*, which, however, seems never to have been published. In any case this name could not have been accepted for the species, as there is already a *Turdus pœcilopterus* described by Vigors (P. Z. S. 1831, p. 54) from the Himalayas. The species was fully described by Dr. Sclater from examples procured by De Oca at Jalapa in the State of Vera Cruz.

The subsequent extension of our knowledge of the range of the species has been given in detail by Messrs. Salvin and Godman in their 'Biologia Centrali-Americana' (Aves, i. p. 23); but since the publication of that work much additional information respecting the distribution of *G. pinicola* has been received, as can be easily recognized from the fine series of skins of the species presented to the British Museum by Messrs. Salvin and Godman.

The following is a list of the specimens in the British Museum, which fully illustrate the range of the species :—

a. Imm.	Valley of Mexico (*White*).	Salvin-Godman Coll.
b. Ad.	Valley of Mexico (*A. Dorman*).	,, ,,
c, d. ♀ ad.	Tetelco, Xochimilco, Valley of Mexico, Jan. (*Ferrari-Perez*).	,, ,,
e. ♂ ad.	Coapa, Tlalpam, Valley of Mexico, Feb. (*F.-P.*).	,, ,,
f. ♂ ad.	Chimalpa, Tacubaya, Valley of Mexico, Jan. 16 (*F.-P.*).	,, ,,
g. ♂ ad.	Hacienda Eslava, Tlalpam, Jan. 4 (*F.-P.*).	,, ,,
h–l. ♂ ad.; *m, n.* ♀ ad.	Real del Monte, Hidalgo, Oct. 23 (*W. B. Richardson*).	,, ,,
o, p. ♂ ♀ ad.	Jalapa (*De Oca*).	Sclater Coll. (Types of species.)
q. ♀ ad.	Cofre de Perote, Vera Cruz, Nov. (*M. Trujillo*).	Salvin-Godman Coll.
r. Ad.	Oaxaca (*Fenochio*).	,, ,,
s. ♂ juv.	Amula, Guerrero, 6000 feet, Aug. (*Mrs. D. W. Smith*).	,, ,,
t, u. ♂; *v.* ♀ ad.; *w.* Juv.	Sierra Nayarit, Jalisco, 8000 feet, July (*W. B. Richardson*).	,, ,,
x. ♂ ad.	Sierra Bolaños, Jalisco, Feb. (*W. B. R.*).	,, ,,

Besides the localities mentioned in the above list, the species has been found in the Valley of Orizaba by Sallé and Sumichrast. The latter met with it once at Moyoapam, at a height of about

8400 feet above the sea. Mr. Ferrari-Perez has also procured an example at Teziutlan in the province of Puebla in November, but the principal information as to the range of the species is contained in the list here given of the series in the Salvin-Godman Collection.

Very little is known of the habits of this Thrush beyond the fact that it is an inhabitant of the pine-woods in the highlands of Mexico, where Mr. Richardson has found it breeding at a height of 8000 feet.

Adult male. Dark brown above, paler on the head, with the feathers lighter brown in the centre, and having whitish shaft-lines on those of the mantle, which become obsolete on the scapulars and lower back; the lateral upper tail-coverts white, with more or less black on the edges; lesser and median wing-coverts blackish-brown; greater wing-coverts blackish-brown, externally buffy-whitish, forming a patch on the wing; bastard-wing black, with white shaft-lines to the feathers; primary-coverts black; quills black, with a well-marked pattern, the primaries with a large white basal area to both webs, and a small white spot beyond the middle of the outer web on the second, third, and fourth primaries; the secondaries edged with white, and with conspicuous light grey tips; tail-feathers black, with a small white spot at the end, increasing in extent towards the outer feathers, the outermost having a white edging; lores dusky blackish, surmounted by a faint superciliary streak of ruddy brown; ear-coverts blackish, with narrow whitish shaft-lines; sides of neck blackish-brown, with lighter brown centres and whitish shaft-lines, as on the hind-neck; cheeks, throat, and fore-neck blackish; centre of breast, abdomen, and under tail-coverts white, the sides of the body ashy-blackish, with white shaft-lines; on the sides of the lower flanks a black patch; under wing-coverts and axillaries black with dusky bases; lower primary-coverts blackish like the under surface of the quills.

Geocichline markings on the quills, white. Bill nearly black. Second primary about equal to the fifth. Feet and claws pale. Outer tail-feathers 0·2 inch shorter than the longest.

Length of wing 5·4 to 5·1 inches, tail 3·45 to 3·15 inches, culmen 1·0 to 0·9 inch, tarsus 1·05 to 0·95 inch; bastard-primary shorter than the primary-coverts, its exposed portion measuring 0·8 to 0·65 inch.

There is apparently no difference to speak of between the summer and autumn plumage, but freshly-moulted birds are somewhat more tinged with ochraceous-buff on the abdomen and under tail-coverts.

There is considerable difference to be seen in the colour of the flanks in the males, those obtained in February showing very little signs of dusky mottling, while one killed in April has the sides of the body almost as black as the throat.

The female is slightly paler than the male in colour, and the secondaries are edged with ashy-white.

Young birds resemble the female as regards the wings and tail, having the secondaries edged with ashy-white, not pure white, as in the male. All the feathers of the upper surface have ovate spots of ochraceous-buff, replaced on the back and rump by longitudinal chestnut centres to the feathers. The ear-coverts are black, with narrow buff lines below the eye; throat and chest, as well as the sides of the body, ochreous-buff, the feathers edged with black, producing a scaled appearance; the breast and abdomen paler, but equally mottled with blackish edgings to the feathers.

A specimen from Amula, killed in September, has nearly moulted out of the mottled plumage.

The Plate represents an adult male and female of the size of life, both drawn from the type specimens in the British Museum. The male has been already figured by Sclater (Cat. Amer. B. pl. i.). [R. B. S.]

GEOCICHLA SIBIRICA (*Pall.*).

SIBERIAN GROUND-THRUSH.

Turdus sibiricus, Pall. Reis. Russ. Reichs, iii. p. 694 (1776).
White-browed Thrush, Lath. Gen. Syn. ii. pt. 1, p. 31 (1783).
Turdus leucocillus, Pall. Zoogr. Rosso-Asiat. i. p. 450 (1811: ♂).
Turdus bechsteini, Naum. Vög. Deutschl. ii. p. 310, pl. lxix. fig. 2 (1822: ♀).
Turdus atrocyaneus, Homeyer, Isis, 1843, p. 604.
? *Merula leucogaster*, Blyth, J. A. S. Beng. xvi. p. 149 (1847).
Turdus mutabilis, Bp. C. R. xxxviii. p. 5 (1854, ex Temm. MSS.).
Cichloselys sibiricus, Bp. Cat. Parzud. p. 5 (1856).
Oreocincla sibirica, Jaub. et Barth.-Lapomm. Rich. Orn. p. 202 (1859).
Oreocincla inframarginata, Blyth, J. A. S. Beng. xxix. p. 103 (1860).
Turdus inframarginatus, Gray, Hand-l. Birds, i. p. 254. no. 3694 (1869).
Geocichla mutabilis, Blyth, Ibis, 1870, p. 167.
Merula sibirica, Dybowski, J. f. O. 1872, p. 437.
Turdulus sibiricus, Hume, Stray Feathers, vi. p. 255 (1878).
Geocichla sibirica, pt., Seebohm, Cat. Birds Brit. Mus. v. p. 181 (1881).

♂. *G.* supercilio albo conspicuo: supracaudalibus concoloribus schistaceis: axillaribus albis, nigricanti-schistaceo terminatis.

♀. *G.* supercilio ochraceo: supracaudalibus brunneis: axillaribus albis, brunneo terminatis.

The Siberian Ground-Thrush was discovered in Dauria by Pallas, and was described by him in 1776. For some reason or other he changed the name to *Turdus leucocillus* in 1811. As time went on the species gathered new titles from European naturalists, who described it from specimens as they occurred in various western localities. Thus Naumann in 1822 associated an adult male of *Merula atrigularis* with an immature male of *Geocichla sibirica* from the Harz Mountains, and he figured and described them as *Turdus bechsteini* (Vög. Deutschl. ii. p. 310). This error he corrected thirty years afterwards (Naum. Vög. Deutschl. xiii. p. 348). In 1828 a female of *Geocichla sibirica*, obtained in Upper Silesia, was erroneously recorded as *Turdus auroreus*, a name given by Pallas to *Geocichla nævia* (*cf.* Gloger, Isis, 1828, p. 1041). An adult male bird, captured on the island of Rügen in the Baltic on the 1st of October, 1842, was described as *Turdus atrocyaneus* by Von Homeyer (Isis, 1843, p. 604).

Examples in the Leyden Museum from Java appear to have been labelled *Turdus mutabilis* by Temminck, and this name first appeared in 1854 when Bonaparte mentioned it (C. R. xxxviii. p. 5). In 1860 Blyth refers to the species as *Geocichla mutabilis* of Salomon Müller in the Leyden Museum, and this is doubtless the origin of Temminck's name. A female of this Ground-Thrush from the Andaman Islands was described in 1860 by Blyth (J. A. S. Beng. xxix. p. 106) as *Oreocincla inframarginata*.

Lastly, the name of *Merula leucogaster* of Blyth (J. A. S. Beng. xvi. p. 149) probably belongs to the present species. It is founded on one of Griffith's drawings from Assam, but the description is

too vague to allow of its correct determination, as no mention is made of the white eyebrow, or of the white on the outer tail-feathers or on the under surface of the wing. Yet the species can hardly be *Merula atrigularis*, which would never be described as "slaty-black," nor could the chestnut flanks of *Merula protomomelæna* have been passed over without mention.

The Siberian Ground-Thrush is an occasional visitor to Central and Western Europe. About a dozen examples have been met with in Germany. Besides the one from the island of Rügen mentioned above, there is the immature male recorded by Naumann from the Harz Mountains, as well as one from Prussian Silesia obtained on the 22nd of October, 1828; while a third from Halberstadt and two procured between Berlin and Stettin are also noticed by him (Vög. Deutschl. xiii. p. 361). A seventh German example, a female, was shot at Elbing, near the Gulf of Danzig, on the 25th of August 1851, and is now in the collection of Von Homeyer in Stolp (*cf.* Seebohm, Brit. Birds, i. p. 204).

There are two examples (one adult, the other immature) in the Museum of the Forstakademie at Neustadt in Mark Brandenburg, Prussia, which are said to have been procured in the neighbourhood (Schalow, J. f. O. 1876, p. 142). A male was shot on the 10th of October, 1878, at Treptan near the coast of Pomerania between Stettin and Stolp (Altum, J. f. O. 1878, p. 107). A specimen in the Museum of the Forstakademie at Eberswald, between Berlin and Stettin, is said to have been caught in the neighbourhood (Altum, J. f. O. 1879, p. 216). There is an example in the Museum of the Univerity at Breslau which is said to have been procured in the Province of Silesia (Floericke, J. f. O. 1891, p. 191).

It has occurred twice in Holland; an immature male was shot in September, 1853, near Paterswolde in the Province of Drenthe, and a still younger male was caught on the 1st of October, 1856, near Noordwyk in the Province of South Holland (Blaauw, Notes Leyden Mus. xv. p. 189). According to Dr. Dubois, a single occurrence is known from Belgium, a young male having been caught near Neufchâteau late in September, 1877 (Bull. Acad. Roy. Belgique, (2) xlvii. no. 6). According to Degland and Gerbe (Orn. Eur. i. p. 418) a young male bird was killed in 1847 by M. Loche in the marshes of the Saintongue. The species is figured by Jaubert and Barthélemy-Lapommeraye in their 'Richesses Ornithologiques' (pl. xiii. fig. 2). The occurrence of the species in Italy was recorded by Prof. Giglioli (Ibis, 1881, p. 196); but he has recently come to the conclusion that the specimen was only an extraordinary variety of the Common Blackbird, and he has withdrawn the Siberian Thrush from the list of Italian birds (Avif. Ital. p. 93). A specimen was shot near Kustendji, in Bulgaria, by Mr. A. Cullen (*cf.* Elwes & Buckley, Ibis, 1890, p. 196).

As regards its occurrence in England, a specimen of this Thrush is said to have been caught at Bonchurch, in the Isle of Wight, in the winter of 1874, but Mr. Howard Saunders does not consider the evidence sufficient to warrant the inclusion of the species in the British list (Man. Brit. Birds, p. 12). The second example recorded from England is in the British Museum, to which it was bequeathed by the late Mr. Frederick Bond, to whose collection it formerly belonged. It was sold to him as a variety of the Redwing, and was said to have been killed between Guildford and Godalming in the winter of 1860–61.

The Siberian Ground-Thrush breeds in the valleys of the Yenesei and the Lena near the Arctic Circle. I found it in latitude 66½° near the junction of the Kureika and the Yenesei (Seebohm, Ibis, 1879, p. 5), and Dr. Théel says that it breeds in great numbers near Toorukhansk (lat. 66° N.), and was seen as far north as latitude 67° (Seebohm, Ibis, 1880, p. 191). Mr. H. Leybourne Popham, in his account of the birds observed by him on the Yenesei River (Ibis, 1897, p. 92), writes as follows:—"This handsome Thrush was often to be seen perched on the top of a tree, whistling a few rich notes, but owing to its extreme wariness it was difficult to approach within shot, and it was only by careful stalking that we managed to obtain three skins, all of males. It was most numerous around

Toorukhansk. We got several nests supposed to belong to this species, but we were never able to thoroughly identify the eggs further than seeing the birds in the immediate vicinity of the nest."

In Dauria the Siberian Ground-Thrush appears to be a spring and autumn migrant (Dybowski, J. f. O. 1872, p. 437), occurring not only in the extreme west of that province, but also in the extreme east (Taczanowski, J. f. O. 1874, p. 335). Godlewski says that he has observed the species at the south of Lake Baikal, but it is very rare and does not appear there every year. It arrives at the end of May, and he has killed a young bird on the 13th of October (Taczanowski, Faune Orn. Sibir. Orient. p. 284).

Neither Middendorff nor Schrenck met with the species, but Radde procured two examples at Tarei-Nor, near Nerchinsk, in the extreme east of Dauria (Reisen im Süden von Ost-Sibirien, ii. p. 233). Jankowski obtained a single example on the island of Askold (Taczanowski, J. f. O. 1881, p. 182), and it has been recorded from Pekin (Swinhoe, Ibis, 1863, p. 93). There is no evidence that it remains during the winter in China, all the dates of its capture being either spring or autumn: Amoy, April 19th (Swinhoe, P. Z. S. 1863, p. 279); Whampoa, 18th of April (Swinhoe, Ibis, 1861, p. 37); Chefoo, end of May (Swinhoe, Ibis, 1874, p. 443); Formosa, Oct. (Swinhoe, spec. in Seebohm Coll.). Abbé David states that it is far from common in China.

Davison found the species very common round the foot of Mount Nwalabo in Tenasserim (lat. 14°) in April, appearing in flocks of sixty individuals, mostly young males with remains of spots on the plumage (Hume and Davison, Stray Feathers, vi. 1878, p. 513), but it is not easy to determine whether these birds were in their winter-quarters or only on migration. As has already been stated, it has once occurred on the Andaman Islands.

There can be no doubt that Java and Sumatra are favourite winter-quarters of this species. Its occurrence in Java has been mentioned, and Mr. Carl Bock obtained many examples in Sumatra, some of which are in the British Museum and others in my collection.

This bird is so very shy and skulking that scarcely anything has been recorded of its habits. When I was in Siberia I occasionally caught a hasty glimpse of a dark-coloured Thrush with a very conspicuous white eyebrow not far from the village of Kureika on the Arctic Circle, whilst the remains of the ice were still straggling down the Yenesei. It was an extremely shy and wary bird, and though I occasionally saw it crossing the open ground between the birch-plantations I did not succeed in shooting one until the 19th of June. I was then walking in a dense birch-plantation; the leaves were not yet out on the trees, and a fortnight before the ground had been covered with a deep bed of snow. This had melted and exposed a thick bed of leaves, the accumulation of many years, amongst which the bird was searching diligently for food.

The nest is described by Messerschmidt as being placed among the branches of a dwarf alder, and composed of mud mixed with grass, and lined with fine grass and small leaves. The eggs are six in number, green with dark rufous spots. Those believed by Mr. Popham to be the eggs of this species differed very much from those of *Turdus dubius*, having a pale blue ground-colour and more distinct spots of reddish-brown. They measured 1·16 inch by 0·82 inch (Ibis, 1897, p. 92).

In the adult male the general colour of the upper parts is slaty-grey, approaching black on the head, each feather being darker on the margin; lores black; eye-stripe white, broad, extending nearly from the nostrils to the nape; wing-coverts slaty-grey; primary-coverts nearly black, with a broad slaty-grey patch on the outer webs; tertials slaty-grey; secondaries and primaries dark brown, margined on the outer webs with slaty-grey; tail nearly black, with the lateral pair of feathers paler, and the central pair suffused with slaty-grey; there is a wedge of white more than half an inch long at the tips of the lateral pair, and one more than a quarter of an inch long at the tips of the next pair; ear-coverts slaty-grey; underparts slaty-grey, with a band of white down the belly and

with white tips to the under tail-coverts; axillaries slaty-grey with white bases; lower primary-coverts slaty-grey; lower secondary-coverts white with slaty-grey bases.

Geocichline markings on inner webs of quills, white.

"Bill dull black; front of legs, feet, and claws greenish-yellow; back of the former dirty yellow; iris dark brown" (*Davison*).

Second primary intermediate in length between the third and fourth; outer tail-feathers 0·15 inch shorter than the longest; length of wing 4·9 to 4·4 inches, tail 3·5 to 3·1 inches, culmen 0·93 to 0·81 inch; bastard-primary much shorter than the primary-coverts, its exposed portion measuring 0·7 to 0·6 inch.

The female is very different from the male. General colour above warm olive-brown, inclining to slaty-brown on the lower back and rump; wing-coverts russet-brown; quills dusky brown, externally russet-brown, with a pale margin to the first primary; tail-feathers dusky brown, with a russet tinge, the two outer ones with a tiny spot of white at the tip; head a little more russet than the back, the eye-stripe fulvous and not so distinct as in the male; ear-coverts ochreous-buff, mottled with blackish edgings to the feathers; cheeks ochraceous, with a blackish line above and below, forming a distinct moustachial streak; under surface of body ochraceous, whiter on the throat, which is spotted with dusky; the fore-neck and breast slightly more rufous and mottled with blackish sub-terminal bars to the feathers, less marked on the sides of the body and flanks; lower breast and abdomen pure white; thighs brown; under tail-coverts white, with dusky bases; under wing-coverts ochraceous-brown; axillaries white, with brown tips; quills dusky below, with the wing-band buffy white: "bill dark brown, the lower mandible and gape dirty yellow to the angle of the gape; feet and claws orange-yellow; iris dark brown" (*W. Davison*). Total length 9 inches, culmen 0·8 inch, wing 4·5 inches, tail 3·0 inches, tarsus 1·05 inch.

Young birds of the year may be distinguished by the pale ochre tips to the wing-coverts.

The Siberian Ground-Thrush is nearest allied to *Geocichla wardi*, and may possibly be almost as closely related to *G. schistacea*. No other species belonging to the genus has a well-marked pale eye-stripe, except *G. nævia*, in which it is chestnut-buff. The absence of pale tips to the upper tail-coverts not only excludes *G. wardi*, but also *G. pinicola*, which has traces of an eye-stripe. The latter species may be also further excluded, together with *G. schistacea*, by the white axillaries. *G. nævia* may be excluded by the Oreocichline pattern of its primaries, and probably by its unspotted dark buff throat; but as the young in first plumage of both birds are unknown, the latter character must be accepted with caution.

The diagnosis of the Siberian Ground-Thrush must therefore stand as follows:—

A pale stripe over each eye, white and very conspicuous in the male.

Upper tail-coverts uniform slate-grey or brown.

Axillaries white on their basal half only.

Outer webs of primaries uniform in colour from end to end.

The last-mentioned character also excludes *G. pinicola*.

The female of *G. sibirica* resembles very closely that of *G. wardi*, but the latter may be easily distinguished either by the pale tips of its upper tail-coverts, or by the greater amount of white on the outermost feather on each side of its tail, which generally extends for more than an inch, whilst that of *G. sibirica* rarely extends for more than half an inch.

GEOCICHLA DAVISONI (*Hume*)

DAVISON'S GROUND-THRUSH.

Turdus sibiricus (nec Gm.), Temm. Man. d'Orn. iii. p. 98 (1835); id. & Schlegel, Faun. Jap., Aves, p. 60, pl. xxxi. (1847).
Turdulus davisoni, Hume, Stray Feathers, v. p. 63 (1877).
Turdulus sibiricus (nec Gm.), Hume, Stray Feathers, v. p. 136 (1877).
Turdus, sp. incogn., Blakiston & Pryer, Ibis, 1878, p. 241.

G. similis *G. sibiricæ*, sed saturatior, abdomine pectori concolore, minimè albo, distinguenda.

The Japanese form of the Siberian Ground-Thrush was discovered by the Siebold expedition to Japan some time between the years 1823 and 1830; but its distinctness from *G. sibirica* was not recognized until 1877, when an example procured by Davison on the slopes of Mooleyit in Tenasserim was described under the name of *Turdulus davisoni* (Hume, Stray Feathers, v. p. 63). This example is now in the British Museum and is identical with Japanese examples; but Hume seems very soon to have convinced himself that it was only a very old example of the Siberian race, and on page 136 of the same volume he records it as *Turdulus sibiricus* (Pallas). In 1878 a full description of this old male bird is given (Hume and Davison, Stray Feathers, vi. p. 255).

There is no authentic record of the occurrence of this species on the island of Yezzo (Blakiston, Amended List of the Birds of Japan, p. 58); but it breeds in some numbers on the mountains of the main island of Japan. On Fuji-Yama it nests at an elevation of 5000 feet (Jouy, Proc. U.S. Nat. Mus. 1883, p. 278). I have a large series from the Yokohama market (Seebohm, Birds of the Japanese Empire, p. 44).

I have only seen three examples which have been procured outside Japan, viz.:—the type of *Turdulus davisoni*, from Mooleyit, and a male and female procured in March by Major Wardlaw-Ramsay at Kareen-nee, 2500 feet above sea-level (Walden, in Blyth's Mammals and Birds of Burmah, p. 100). These three examples are in the British Museum.

It is needless to add that nothing is known of the routes of migration of this species. Of its habits we know nothing, except that Messrs. Blakiston and Pryer state that the species is a favourite cage-bird with the Japanese, and is said to have a sweet but not very loud song (Ibis, 1878, p. 241).

G. davisoni appears to differ from *G. sibirica* in three or four points. In the first place, the Japanese birds have longer tails in both sexes—

Japan:	♂ 3·75 to 3·4;	♀ 3·66 to 3·5.
Siberia, &c.:	♂ 3·4 to 3·1;	♀ 3·15 to 3·1.

They have also longer wings—

Japan:	♂ 5·1 to 4·75;	♀ 4·9 to 4·75.
Siberia, &c.:	♂ 4·75 to 4·4 ;	♀ 4·4 to 4·35.

The Japanese birds are darker, especially on the crown, and they have much less white on the tips of the outer tail-feathers. Immature birds from Japan have some white on the belly, but in fully adult examples the white is confined to the feathers round the vent, which appears never to be the case in Siberian examples.

In addition to having longer tails, the females of the Japanese race appear to differ from females of the typical form in having more of the feathers of the underparts, especially those of the breast, squamated.

[N.B.—The difference between these two races is really very slight, and intermediate specimens are not wanting. Such are three male birds in the British Museum from China (*Gould Coll.*), Amoy (*Swinhoe*), and Mooleyit (*Limborg*: *Tweeddale Coll.*), which, though referred to *G. sibirica*, approach *G. davisoni* in the extent of slaty-grey colour on the underparts.—R. B. S.]

GEOCICHLA LITSITSIRUPA (*Smith*).

SOUTH-AFRICAN GROUND-THRUSH.

Merula litsitsirupa, Smith, Rep. S. Afr. Exped. App. p. 45 (1846).
Turdus strepitans, Smith, Ill. Zool. S. Afr. pl. xxxvii. (1839).
Turdus crassirostris, Licht. Verz. südafr. Faun. p. 14 (1842).
Psophocichla strepitans, Cab. J. f. O. 1860, p. 182.
Turdus litsitsirupa, Sharpe, Cat. Coll. Afr. B. p. 20 (1871).
Geocichla litsitsirupa, Seebohm, Cat. Birds Brit. Mus. v. p. 182 (1881).

G. suprà grisescens: subalaribus et axillaribus aurantiaco-fulvis: remigibus omnibus intùs aurantiaco-fulvis: subtùs alba, maculis præpectoralibus ovatis nigris: pectore et corporis lateribus maculis nigris triangularibus ornatis.

The present species has a somewhat wide distribution in South Africa, but does not occur in the more southern districts of the Cape Colony. Mr. E. L. Layard says that he has received specimens from Colesberg and Kuruman (B. S. Afr. 1867, p. 127). Sir Andrew Smith states that immediately on reaching Kurrichaine this Thrush began to appear in the thickets, and he continued to acquire a specimen occasionally, even in the vicinity of the Tropic (Zool. S. Afr. text to pl. xxxvii.).

It must be rare in Natal, as I have never seen a specimen from that colony, but Captain Shelley states that he saw one which had been killed near Durban (Ibis, 1875, p. 73). Messrs. R. B. and J. D. S. Woodward have procured three single examples during their travels in Zululand, and these were obtained at Eschowe, Ulundi, and the Ivuna River below the Nangoma range. Specimens are in the British Museum from the Transvaal, where it is not uncommon among the mimosas (Ayres, Ibis, 1877, p. 243). Mr. Ayres has also obtained it on the Limpopo (Ibis, 1867, p. 293). Mr. Symonds met with the species near Kroonstad, in the Orange Free State; he states that it is common and breeds in the vicinity of that town (Ibis, 1887, p. 330). In the Seebohm Collection is a pair of birds procured by Mr. W. Lucas at Rustenberg, in the Eastern Transvaal, in June. The late Mr. Frank Oates also shot a pair on the Eland's River (Oates, Matabeleland, p. 307), and during his expedition to Matabeleland Mr. T. E. Buckley noted that it was not often seen in the Transvaal (Ibis, 1874, p. 369). In Bechuanaland it has been obtained by Dr. Exton, who gives the native name as "Chu-chu-roo-foo" (Sharpe, ed. Layard's B. S. Afr. p. 198).

Mr. Frank Oates likewise met with the species at Tati in March (*cf.* Oates's Matabeleland, p. 307), and some specimens collected by the late Dr. Bradshaw in the Makalaka country are in the Shelley Collection in the British Museum. Mr. T. Ayres says that it was found scantily scattered throughout Mashonaland (Shelley, Ibis, 1882, p. 250). So far as is at present known, its eastern range does not extend across the Zambesi, as it has not been met with in Nyasaland by Sir Harry Johnston or any of his assistant collectors.

In South-western Africa it would appear to be not uncommon, as Andersson sent many specimens from Damaraland, where, he says, the species is partially migratory, only a few remaining throughout the year. According to the same observer, it occurs in the Lake Regions and also extends to Great Namaqualand (B. Damaraland, p. 114). Professor Barboza du Bocage (Orn. Angola, p. 263)

observes that the present species appears to be common and widely distributed in the southern districts of the Portuguese province of Angola, as Senhor Anchieta has collected specimens in Benguela, at Capangombe, Huilla, Quillengues, Kiulo, and at Humbe on the Cunene River. Other localities recorded for the species have been Quibulo and Cahata in Benguela (*Anchieta*: Bocage, Jorn. Lisb. (2) no. vii. p. 167, 1892), and the Kakella River in the Cunene region (*Van der Kellen*: Büttik. Notes Leyden Mus. x. p. 226).

"This Thrush," writes Sir Andrew Smith, "seeks its food upon the ground, and, when so occupied, its resort is readily discovered by the natives from the noise it makes in scratching the ground or in displacing rubbish and decayed leaves which conceal the insects it is seeking." Andersson states that in Damaraland "it lives chiefly on insects, for which it searches at the roots of trees and amongst low bushes, old leaves, and decayed wood. It scratches somewhat after the manner of a fowl, and is thence called by the Bechuanas the 'Ground-scraper'; it also runs with great celerity. It lives singly or in pairs, and occasionally perches on the topmost branch of some lofty tree. It utters a plaintive half-song, half-call, just as if it were troubled with a bad cold." He describes the nest as follows:—"I took a nest containing three young birds on the 29th of October; it was built on a branch about ten feet from the ground, and was composed exteriorly of grass, the interior being lined with down and feathers."

Adult male. General colour above ashy-grey, slightly mottled with dusky centres to the feathers of the crown and mantle; lesser wing-coverts ashy-grey; median and greater coverts dark brown, ashy-brown on the outer edge; bastard-wing, primary-coverts, and primaries blackish, the latter with a pale ashy margin to the outer web, and with two-thirds of the inner web orange-buff; this pattern diminishing on the secondaries, where it occupies the basal half only of the inner web; some of the inner secondaries fringed with white at the ends, the innermost ones ashy-brown like the back; centre tail-feathers light brown, the rest blackish with ashy-brown edges, the two outermost narrowly tipped with white; lores and a narrow eyebrow white, continued behind the ear-coverts to the sides of the neck, which are spotted with black; an indistinct supra-loral line of black; eyelid white, with a blackish spot on the upper anterior edge; sides of face white, with a broad double oblique bar of black, one drawn from below the eye, and the other, slightly crescentic, running behind the ear-coverts; cheeks and throat white, with a distinct malar line, composed of black spots; under surface of body white, distinctly spotted with black, the spots longitudinal ovals on the fore-neck, and fan-shaped on the breast and sides of the body, the latter being slightly washed with ashy; the fore-neck and chest showing a tinge of pale orange-buff; abdomen and under tail-coverts white; axillaries and under wing-coverts orange-buff, not quite so deep in tint as the quill-lining: bill black or horn-colour, yellow at the base of the lower mandible; feet light greenish-yellow (*Andersson*) or ochre (*Buckley*); iris dark hazel (*Buckley*), or double-ringed, yellow and red (*Ayres*). Total length 9·2 inches, culmen 1·0 inch, wing 5·2 inches, tail 2·65 inches, tarsus 1·5 inch.

Adult female. Similar to the male, but not quite so heavily spotted below: "feet light brown" (*Buckley*). Total length 8·5 inches, wing 4·8 inches.

Young. Rather browner than the adult, and spotted with yellowish-buff centres to the feathers, with a sub-terminal dusky line before the tip; the lesser and median wing-coverts with fan-shaped tips of orange-buff, with which colour the greater series are margined; innermost secondaries with orange-buff tips; the pale tips to the outer tail-feathers very distinct; facial markings and spots on the under surface very distinct, but the whole of the underparts suffused with pale orange-buff.

The figure in the Plate is drawn from a female specimen from Rustenberg, in the Seebohm Collection. [R. B. S.]

GEOCICHLA SEMIENSIS (*Rüpp.*).

SEMIÉN GROUND-THRUSH.

Merula (*Turdus*) *simensis*, Rüpp. Neue Wirb., Vög. p. 81, pl. xxix. fig. 1 (1835).
Turdus musicus (nec L.), Des Murs in Lefebvre, Voy. Abyss. Zool. p. 96 (1845–50).
Merula simensis, Rüpp. Syst. Uebers. p. 60 (1845).
Turdus simensis, Gray, Gen. B. i. p. 210 (1847).
Psophocichla simensis, Cab. J. f. O. 1860, p. 182.
Turdus semiensis, Heugl. Orn. N.O.-Afr. i. p. 380 (1869).
Geocichla simensis, Seebohm, Cat. Birds Brit. Mus. v. p. 183 (1881).

G. similis *G. litsitsirupæ*, sed magis brunnescens, facie et gastræo toto magis aurantiaco-fulvis distinguenda.

Although this species is undoubtedly closely related to *G. litsitsirupa* of South Africa, the differences between the two birds are well-marked, and each appears to be restricted to a well-defined geographical area.

Von Heuglin states that the Semién Ground-Thrush is one of the commonest birds of the Abyssinian Highlands, from the Taranta Pass and Mensa to Western Amhara, southwards to the Galla country, but not occurring below 5000 feet. Dr. W. T. Blanford found it common throughout the highlands, but not observed below 5000 or 6000 feet elevation, and he states that he did not meet with it in the Anseba Valley (Geol. & Zool. Abyss. p. 387). Mr. Jesse obtained specimens from the Taconda Pass in April (Finsch, Tr. Z. S. vii. pt. 4, p. 241, 1870). Sir W. C. Harris met with the species at Angollalá and Ankober in Shoa (Seebohm, Cat. Birds Brit. Mus. v. p. 183), and the Marquis Antinori found it in the same country. He says that at Licce it was common from October to November, and he also met with it at Fecherié-Ghem, where Dr. Ragazzi also records it as being a very common bird (Salvad. Ann. Mus. Genov. (2) i. p. 158, 1884; vi. p. 259, 1888).

The present species has been recorded from Sierra Leone, where Afzelius is said to have obtained it (Sundev. Œfv. K. Vet.-Akad. Forh. Stockh. 1849, p. 147). Dr. Otto Finsch says that the specimen in question belonged to the South-African form, *G. litsitsirupa*, but it may well be doubted if either of these species really occurs in the forest-region of Western Africa.

According to Von Heuglin, this Thrush lives in pairs or in families in the larger clumps of trees, especially among the junipers, but more still round the villages and in the thickets surrounding the churches, as well as in the uncultivated districts. In the thicker bush-covered places it is less often observed, but is usually to be seen on the ground, in broad clearings, cattle-pastures, and meadow-land. In Abyssinia it is resident, and is said to nest on the juniper-trees. Its habits and call-notes reminded him most of those of the Mistle-Thrush (*Turdus viscivorus*).

Adult male. Very similar to *G. litsitsirupa*, and only differing from that species in the more pronounced tint of orange-buff on the under surface of the body, and the bolder and more distinct fan-shaped black spots: "bill pale dusky brown, the lower mandible yellowish; feet pale horn-colour; iris dusky" (*Von Heuglin*). Total length 8·2 inches, culmen 1·0 inch, wing 5·3 inches, tail 2·6 inches, tarsus 1·5 inch.

Adult female. Similar to the male. Total length 8·0 inches, wing 5·2 inches.

The species is figured on the same Plate as *G. litsitsirupa*, from a specimen from Shoa in the Seebohm Collection. [R. B. S.]

GEOCICHLA TERRESTRIS (*Kittl.*).

KITTLITZ'S GROUND-THRUSH.

Turdus terrestris, Kittlitz, Mém. Acad. St. Pétersb. i. p. 245, pl. xvii. (1830).
Geocichla terrestris, Bp. Consp. i. p. 268 (1850).
Myiothera passerina, Bp. Consp. i. p. 268 (1850).
Cichlopasser terrestris, Bp. C. R. xxxviii. p. 6 (1854).
Zoothera terrestris, Gray, Hand-l. B. i. p. 261. no. 3814 (1869).

G. axillaribus omninò brunneis : dorso nigro fasciato : tectricibus supracaudalibus minimè pallidiùs terminatis.

This species is apparently peculiar to the Bonin Islands, where Kittlitz discovered it in 1828. The type specimen is in the St. Petersburg Museum, and a second is at Frankfort (Hartert, Kat. Vogels. Mus. Senckenb. Ges. p. 6). The Leyden Museum possesses a third (the *Myiothera passerina* of Bonaparte's 'Conspectus'), and a fourth is in the Vienna Museum.

The following description is taken from the specimen in the Leyden Museum :—

General colour of the upper parts olive-brown, shading into chestnut-brown on the rump, upper tail-coverts, and tail; the inside web of each feather much darker, approaching black on the back; lores dark brown; eye-stripe very obscure; lesser wing-coverts brown, darkest on the inside web; median coverts dark brown, with large olive-brown tips; greater coverts nearly black, broadly tipped, and narrowly margined towards the base, with olive-brown; primary-coverts black, with a broad olive-brown patch on the outer webs; tertials dark brown on the inner web, and olive-brown on the outer web; secondaries brown, margined with olive-brown on the outer webs; primaries brown, with the basal half of the outer webs, and a spot where the emargination begins, olive-brown; tail-feathers chestnut-brown; ear-coverts brown; underparts olive-brown, shading into white on the chin, throat, and centre of belly; under tail-coverts dark brown, with irregular diamond-shaped white tips; axillaries brown; under wing-coverts brown.

Geocichline markings on inner webs of quills, dirty white.

Bill (possibly faded to) horn-colour; second primary intermediate in length between the sixth and seventh; legs, feet, and claws pale; outer tail-feathers very slightly shorter than the longest.

Length of wing 3·8 inches, tail 2·6 inches, culmen 0·85 inch, tarsus 1·07 inch, bastard-primary 0·8 inch.

(33)

The figure in the Plate is drawn life-size from the specimen in the Leyden Museum.

TURDUS MARAÑONICUS, *Tacz.*

MARAÑON THRUSH.

Turdus, sp., Tacz. P. Z. S. 1879, p. 221.
Turdus marañonicus, Tacz. P. Z. S. 1880, p. 189, pl. xx. (ex Stolzm. MSS.); Salvin, Nov. Zool. ii. p. 2 (1895).

T. pectore maculis squamatis brunneis ornato : caudâ olivascenti-brunneâ : suprà pallidè olivascenti-brunneus.

The present species is apparently confined to Peru. It was first discovered by Messrs. Stolzmann and Jelski in the valley of the Marañon, where it was said by them to be common; but Taczanowski did not describe it as new in 1879, as the only specimen sent by the two Polish travellers from Tambillo was immature. In 1880, however, adult specimens were described by Taczanowski from Callacate, to which the MS. name of *Turdus marañonicus* had been attached by Dr. Stolzmann. Mr. O. T. Baron has likewise found the species in Northern Peru, and procured specimens at Vina, Huamachuco, at an elevation of 5500 feet, in February and March.

Mr. Stolzmann says that this Thrush was a bird of passage at Tambillo during the rainy season, being unknown there from September to May, and only appearing in small numbers at the commencement of the dry season. It is numerous on the Marañon, and is the only representative of the family. It inhabits the mimosa thickets. Its cry of alarm resembles that of other Thrushes, but Stolzmann says that he never heard its song. At Callacate it was equally as common as on the Marañon.

The Marañon Thrush belongs to the first section of the genus *Turdus*, as arranged by Mr. Seebohm, where the breast is spotted and the tail olive-brown, the second primary being shorter than the seventh.

Adult male. General colour pale olive-brown or earthy-brown, with obsolete dusky margins to the feathers of the upper surface; the mantle with faint shaft-streaks of pale buff; wing-coverts like the back; quills dusky brown, externally like the back, the primaries edged with whity-brown; tail a little paler than the back, with obsolete dusky bars under certain lights; crown of head uniform with the back, as also the lores, sides of face, and ear-coverts, the latter with pale linear shaft-stripes; cheeks, throat, and under surface of body white, the former mottled with a few fan-shaped spots of pale brown, the fore-neck and breast with rather darker crescentic markings of brown, paler again on the sides of the body; abdomen and under tail-coverts white; axillaries and under wing-coverts pale ochraceous-buff, as also the lining of the quills: "bill greyish horn-colour; feet ashy; iris dark brown" (*Stolzmann*). Total length 9·1 inches, culmen 1·0 inch, wing 4·7 inches, tail 3·7 inches, tarsus 1·25 inch.

Adult female. Similar to the male. Total length 9 inches, culmen 0·95 inch, wing 4·6 inches, tail 3·65 inches, tarsus 1·3 inch.

Young. Darker brown than the adults, the dusky margins to the feathers of the upper surface evident, and the buff shaft-streaks plainly indicated on the back, rump, and upper wing-coverts, the latter with fan-shaped tips of orange-buff to the lesser and median series, and the greater coverts edged with orange-buff at the ends, forming a narrow wing-bar; head mottled with pale buff centres

to the feathers; ear-coverts dusky brown with narrow shaft-lines; cheeks and throat white, with a few pale brown spots; fore-neck tinged with buff, and thickly mottled with blackish spots, which are also pronounced on the breast and sides of the body, which are white; the abdomen and under tail-coverts white.

The figures in the Plate represent an adult and young bird, drawn from specimens in the Salvin-Godman Collection in the British Museum. [R. B. S.]

TURDUS BEWSHERI, *E. Newton*.

BEWSHER'S GROUND-THRUSH.

Turdus bewsheri, E. Newton, P. Z. S. 1877, p. 299, pl. xxxiv.; Seebohm, Cat. Birds Brit. Mus. v. p. 188 (1881).

T. pectore maculis squamatis brunneis ornato: caudâ olivascenti-brunneâ: notæo saturatè chocolatino vel saturatè brunneo: præpectore ferè concolore, brunneo.

This species was discovered by Captain Bewsher in the island of Anjouan or Johanna, in the Comoro group, in 1876. It has since been found by Sir John Kirk in the same island (Shelley, Ibis, 1879, p. 677), and M. Humblot has sent many specimens from Johanna to the Paris Museum (Milne-Edwards and Oustalet, Nouv. Arch. Mus. (2) x. p. 251, 1888).

Nothing has been recorded of the habits of this Thrush.

Adult. General colour dark brown, with a faint shade of olive on the back, scapulars, and wing-coverts; quills dusky brown, externally more ruddy brown than the back; tail-feathers dark brown, externally olive-brown; head like the back; lores whitish, spotted with dusky; ear-coverts dark brown, with whitish shaft-lines to the feathers; cheeks white, the feathers tipped with brown; throat white, narrowly margined with pale brown; fore-neck light fulvous-brown, the feathers faintly edged with light brown and having pale shaft-streaks; remainder of under surface of body white, the breast-feathers having olive-brown margins, producing a scaled appearance; the sides of the breast and flanks olive-brown, with broad white shaft-streaks; under tail-coverts white, edged with olive-brown; axillaries and under wing-coverts white, with a tinge of tawny-buff; quills dusky brown below, lighter and more ashy-brown along the inner webs: bill dark brown; feet light horny-brown (in skin). Total length 9·5 inches, culmen 0·95 inch, wing 4·4 inches, tail 3·2 inches, tarsus 1·45 inch.

Professor Milne-Edwards and Dr. Oustalet remark that the series sent to the Paris Museum by M. Humblot does not afford any trace as to what the plumage of the young bird is like, and in what way it differs from the adult. The only variation in the colour of the plumage that I can find in the specimens in the British Museum is that some birds are more ruddy brown than others, and not so olive, and, further, that the chest is more rufescent in some specimens.

The figure in the Plate is taken from one of Captain Bewsher's specimens in the Seebohm Collection.

[R. B. S.]

TURDUS OLIVACEIFUSCUS, *Hartl.*

ST. THOMAS ISLAND THRUSH.

Turdus olivaceofuscus, Hartl. Abth. Ges. Nat. Hamb. ii. pt. 2, p. 491, pl. iii. (1852); Seebohm, Cat. Birds Brit. Mus. v. p. 189 (1881).

T. pectore maculis squamatis brunneis ornato: gutture et præpectore brunneis, ferè concoloribus: gulâ vix albido maculatâ.

This Thrush was discovered by Weiss in the island of St. Thomas in the Bight of Benin, W. Africa, and the type is in the Hamburg Museum. It has since been found in the same island by Senhor Francesco Newton, who states that it is common and universally distributed (Bocage, Jorn. Lisb. (2) no. vi. p. 80, 1891).

The nest is described by Professor Barboza du Bocage as a flattened cup composed of roots of ferns, threads of palms, and stems and leaves of grasses. The eggs are oval and greenish in colour, with many irregular spots and dots of reddish-brown: axis 34 millim., diam. 21 millim.

Adult male. General colour above dark olive-brown, the wing-coverts like the back; quills dark brown, externally olive-brown like the back; head like the back; lores and sides of face dusky olive-brown; throat brown, slightly mottled with white centres to the feathers; fore-neck and chest nearly uniform pale umber-brown, the feathers of the latter varied with sub-terminal bars of whitish; breast, abdomen, and under tail-coverts white, the feathers edged at the ends with crescentic lines of pale brown, less distinct on the flanks, which are pale umber-brown; thighs ashy; under wing-coverts orange-buff, the axillaries also orange-buff, but shaded with pale brown at the ends; lower primary-coverts and quill-lining dull sepia-brown, with the base of the inner webs ochraceous-buff: bill and feet dark brown; iris chestnut. Total length 9·0 inches, culmen 0·95 inch, wing 4·6 inches, tail 3·5 inches, tarsus 1·25 inch.

Adult female. Similar to the male. Total length 9·0 inches, culmen 0·95 inch, wing 4·6 inches, tail 3·65 inches, tarsus 1·25 inch.

The proportions of the quills are as follows:—Third primary equal to the sixth, the fourth and fifth equal and longest; second primary intermediate between the seventh and eighth. The author relied on the "second primary being equal to or longer than the fifth" as the principal character for the separation of *T. olivaceifuscus* from *T. bewsheri*, but, as will be seen on comparison, the brown throat is the more reliable point of distinction from that species. It is certainly remarkable that two Thrushes from such widely separated localities should be so exceedingly close to each other in general appearance.

The descriptions and figures are taken from specimens in the British Museum.

[R. B. S.]

TURDUS HERMINIERI, *Lafr.*

L'HERMINIER'S THRUSH.

Turdus l'herminieri, Lafr. Rev. Zool. 1844, p. 167.
Cichlherminia herminieri, Bonap. Compt. Rend. xxxviii. p. 2 (1854); Sharpe, Cat. Birds Brit. Mus. vi. p. 327 (1881); Cory, B. West Ind. p. 21 (1889).
Cichlherminia bonapartii, Scl. P. Z. S. 1859, p. 335.
Margarops herminieri, Scl. & Salv. Nomencl. Av. Neotr. p. 2 (1873); Lawr. Proc. U.S. Nat. Mus. i. pp. 452, 486 (1879).

T. mandibulâ flavâ: pedibus flavidis: regione ophthalmicâ nudâ flavâ: remigibus intus vix rufescenti-fulvis: gutture minimè nigro maculato: notæo rufescenti-brunneo: regione paroticâ brunneâ, angustè albido-lineatâ: præpectore rufescente, plumis gastræi rufescenti-brunneo marginatis, sicut squamatis.

L'Herminier's Thrush and its immediate allies have, until quite recently, been considered to be members of the family *Mimidæ* or Mocking-birds. Dr. Stejneger, however, in 1883, in a very clever paper entitled "Remarks on the Systematic Arrangement of the American Turdidæ" (Proc. U.S. Nat. Mus. vol. v. pp. 449–483), has conclusively shown that the genera *Cichlherminia* and *Mimocichla* are Thrushes, with a booted, not scutellated, tarsus. Seebohm appears to have considered them to be true members of the genus *Turdus*, and has lettered the plates accordingly, but in my opinion the genus *Cichlherminia* should be retained. As to the spotted young birds, which would help to fix the position of the genus *Cichlherminia* as an undoubted member of the *Turdidæ*, Dr. Stejneger writes:—"Unfortunately I have not been able to procure a young specimen, and consequently I cannot tell whether its markings agree with the young of the other *Turdidæ*, although I have but little doubt that this will be found to be the case."

This species was described in 1844 by Lafresnaye from specimens from the Island of Guadeloupe, and was named after Dr. L'Herminier, whose list of the birds of this West Indian island is published by Mr. G. N. Lawrence in the first volume of the 'Proceedings of the United States National Museum.' It is the type of the genus *Cichlerminia* of Bonaparte, and in 1859 received the name of *Cichlherminia bonapartii* from Dr. Sclater, but the reason for this additional synonym is not quite clear.

In Guadeloupe, according to Mr. F. Ober (*cf.* Lawrence, *l. c.*), this Thrush is called the "Pied jaune." He writes:—"A resident of the wooded hills and mountains; found in Dominica in the same localities as the *Perdrix*, woods sufficiently free from underbrush to afford places for scratching. The places where they have disturbed the earth by scratching are frequently seen in the paths, where the woods are thick, and in the open forest. They will come quickly at the call if within hearing, but are shy, flying cautiously from tree to tree, never long at rest."

The following description is taken from the sixth volume of the British Museum 'Catalogue of Birds':—

Adult male. General colour above russet-brown, the feathers of the crown with obscure dusky margins, the wing-coverts like the back; quills light brown, externally reddish-brown, the greater coverts also slightly more reddish-brown than the back; tail-feathers reddish-brown; lores like the head; ear-coverts russet-brown, narrowly streaked with fulvous shaft-lines, a few of

which are also seen on the sides of the crown above the ear-coverts, but not sufficient to form an eyebrow; throat and fore-neck sandy buff, the feathers of the former mesially streaked with light brown, the fore-neck being sandy buff, with brown margins to the feathers; remainder of under surface conspicuously mottled, the feathers having an ovate white centre, with a distinct light-brown edging, before which there is a distinct sub-terminal shade of darker brown; lower abdomen and vent white; under tail-coverts pale sandy buff or cream-colour, with brown bases, and margined with brown, less distinctly on the longer ones; thighs brown, externally tipped with white; under wing-coverts and axillaries white, rather broadly edged with pale sandy brown; quills brown below, sandy brown along the inner web, forming a conspicuous quill-lining. Total length 9·5 inches, culmen 1·2, wing 5·3, tail 3·6, tarsus 1·7. [R. B. S.]

TURDUS LAWRENCII (*Cory*).

LAWRENCE'S THRUSH.

Cichlherminia lawrencii, Cory, Auk, viii. p. 44 (1891); id. Cat. West Ind. B. p. 121 (1892).

T. similis *T. herminieri*, sed suprà rufescenti-brunneus et plumis gutturalibus rufescenti-brunneo, haud pallidè brunneo, marginatis.

Mr. C. B. Cory has described the Thrush from Montserrat as distinct from the allied species of the neighbouring West Indian Islands.

He remarks as follows:—"The Montserrat bird is intermediate in colour between *Cichlherminia dominicensis* and *C. herminieri*. The feathers on the throat are edged with rufous-brown, not pale brown as in *C. herminieri*. The back is reddish brown, not pale olive as in *C. herminieri* or dark brown as in *C. dominicensis*. The white arrow-shaped markings on the underparts are larger and more regular."

The following is the description given by Mr. Cory (*l. c.*):—"Upper parts, wings, and tail dark rufous-brown; throat reddish brown, the middle of the feathers marked unevenly with brownish white, edged with reddish brown. The feathers of the underparts are white, edged with brown, showing large, white, arrow-shaped markings on the lower breast and belly; the feathers of the under wings white, edged with brown; under surface of inner primaries showing pale rufous-brown on the inner webs. Length 9·5 inches, wing 5·5, tail 3·75, tarsus 1·5, bill 0·95."

I have not seen a specimen of this Thrush, and have therefore not been able to figure it in the present work. [R. B. S.]

TURDUS SANCTÆ-LUCIÆ (*Sclater*).

SANTA-LUCIA THRUSH.

Margarops herminieri (nec Lafr.), Scl. P. Z. S. 1871, p. 268; Semper, P. Z. S. 1872, p. 647.
Margarops sanctæ-luciæ, Scl. Ibis, 1880, p. 73.
Margarops herminieri, var. *semperi*, Lawr. Bull. Nutt. Orn. Club, v. p. 165 (1880).
Cichlherminia sanctæ-luciæ, Sharpe, Cat. Birds Brit. Mus. vi. p. 328 (1881); Cory, B. West Ind. p. 22 (1889).

T. similis *T. herminieri*, sed maxillâ flavo apicatâ et subcaudalibus albis basin versùs brunneis distinguendus.

The Santa-Lucia Thrush differs from *T. herminieri* of Guadeloupe in having the rufous shade on the lower throat and fore-neck not so strongly pronounced, and the inner lining of the quills of a lighter rufous. The under tail-coverts have brown bases, but are white instead of cream-colour at the tips, and the mandible is yellow on the culmen (*cf.* Sharpe, Cat. Birds Brit. Mus. vi. p. 327). Dr. Sclater separated the species on the lighter colour of the back, the absence of black spots on the chest, and the longer wing and tail in the Santa-Lucia bird.

The Rev. J. E. Semper, who forwarded the specimens on which the species was founded by Dr. Sclater, says that it is called in Santa Lucia "Molvie" or "Mauvie." He writes:—"This bird is counted as one of our game birds, and is killed in large numbers from August to January yearly. About October to December these birds are found in large numbers in flocks feeding on the berries of certain trees; but for the remainder of the year they are dispersed in pairs, and become very poor. They breed about April or May, the female building a nest of dried leaves, twigs, &c. on a bush or low tree, laying two eggs of a blue-green. They take very little shot to kill them."

The following is my description of the species in the sixth volume of the 'Catalogue of Birds':—

Adult male. General colour above ruddy brown, a little darker on the head; wing-coverts like the back; quills dark brown, externally like the back; tail-feathers brown, with a bronzy gloss; lores and base of lower mandible rufous; ear-coverts and sides of face like the back, with fulvous streaks on the former; throat fulvescent, with ruddy-brown streaks; fore-neck and breast ruddy-brown, all the feathers distinctly centred with buffy white, producing a strongly mottled appearance, which is continued down the sides of the body, where the centres of the feathers are larger and whiter; abdomen and under tail-coverts white, the feathers edged with ruddy-brown on the lower breast; the under tail-coverts with ruddy-brown bases; axillaries and under wing-coverts white, with yellowish-brown edges; the coverts near the edge of the wing brown, with whitish spots; quills brown, edged with rufous along the inner web: "feet bright yellow; iris dull green" (*J. E. Semper*). Total length 10 inches, culmen 1·15, wing 5·15, tail 3·8, tarsus 1·6.

The female does not differ from the male in colour. Wing 5·35 inches. [R. B. S.]

TURDUS DOMINICENSIS (*Lawr.*).

DOMINICA THRUSH.

Margarops herminieri (nec Lafr.), Lawr. Proc. U.S. Nat. Mus. i. p. 52 (1878).
Margarops dominicensis, Lawr. Proc. U.S. Nat. Mus. iii. p. 16 (1880).
Cichlherminia dominicensis, Sharpe, Cat. Birds Brit. Mus. vi. p. 328 (1881); Cory, B. West Ind. p. 22 (1889).

T. mandibulâ flavâ: pedibus flavidis: regione periophthalmicâ flavâ nudâ: remigibus intus cinerascenti-brunneis, minimè rufescentibus: gutture et præpectore maculis nigris ornatis.

The Dominica representative of *T. herminieri* differs from that species and from *T. sanctæ-luciæ* in being very much darker both above and below, with the throat and breast deep ochraceous, relieved by shaft-lines of brighter ochre and a sub-terminal spot of the latter colour, followed by a spot of black, which gives a distinctly mottled appearance to the plumage. The brown edgings to the flank-feathers are also broader and much darker. The lining to the quills is dull ashy and not rufescent.

In Dominica Mr. Ober says that the bird is called "Mauvis" *. It is not abundant in the island, and Mr. Ober gives the following note on the species:—"This curious bird inhabits the high woods; especially does it delight in the comparatively open places beneath the towering *Gomier* trees, where perhaps a narrow trail has left the ground bare of leaves. There you will find where it has been scratching with its strong feet. It is very shy, and being very good as food it is sought by the mountaineers, who call it to them by imitating its cry of distress."

The following description is copied from the sixth volume of the 'Catalogue of Birds':—

Adult male. General colour above dark olive-brown, the head rather duller, and having obscure dusky margins to the feathers; wing-coverts like the back; quills dark brown, externally like the back; tail-feathers dark brown, washed on their edges with olive-brown like the back; lores blackish brown; sides of face and ear-coverts russet-brown, the feathers mesially streaked with deep ochraceous buff; a few streaks of ochraceous buff above the ear-coverts on the sides of the crown; throat and chest rich ochraceous buff, the feathers broadly edged with fulvous-brown and spotted with black at the ends, these spots being very distinct; remainder of under surface of body white, with fulvous-brown margins, sometimes blackish; the whole breast and abdomen strongly mottled, except the lower abdomen, which is white, like the under tail-coverts; the longer feathers of the latter margined with olive-brown; thighs olive-brown, tipped with white; under wing-coverts and axillaries pure white, narrowly edged with dark brown or sandy brown; quills ashy brown below, lighter along the edge of the inner web: "iris tea-colour" (*F. Ober*). Total length 9 inches, culmen 1·1, wing 4·65, tail 3·1, tarsus 1·65. [R. B. S.]

* Not "Morer," as Mr. Lawrence has transcribed the name from Mr. Ober's labels.

TURDUS ILIACUS, *Linn.*

RED-WING.

Turdus iliacus, Linn. Syst. Nat. i. p. 292 (1766); Newton, ed. Yarrell, Brit. B. i. p. 268 (1872); Dresser, Birds of Europe, ii. p. 35, pl. 3 (1872); Seebohm, Cat. Birds Brit. Mus. v. p. 189 (1881); id. Hist. Brit. B. i. p. 220 (1883); Lilford, Col. Fig. Brit. B. pt. 1 (1885); Saunders, Man. Brit. B. p. 5 (1889); Sharpe, Handb. Brit. B. i. p. 259 (1894).
Turdus mauvis, Müll. Syst. Nat. Suppl. p. 141 (1776).
Turdus illas, Pallas, Zoogr. Rosso-Asiat. i. p. 456 (1811).
Sylvia iliaca, Savi, Orn. Tosc. i. p. 215 (1827).
Turdus betularum, Brehm, Vög. Deutschl. p. 386 (1831).
Turdus vinetorum, Brehm, l. c.
Merula iliaca, Selby, Brit. Orn. i. p. 165 (1833).
Turdus gracilis, Brehm, Naumannia, 1855, p. 281.
Iliacus illas, Des Murs, Traité d'Ool. p. 293 (1860).
Iliacus minor, Des Murs, l. c.
Hylocichla iliaca, Ridgw. Proc. U. S. Nat. Mus. iv. p. 322 (1882).

T. caudâ olivascenti-brunneâ: maculis gastræi triquetris: supercilio albo conspicuo: axillaribus et subalaribus vinaceo-castaneis.

The Red-wing nests mostly within the Arctic Circle, from Iceland to the valley of the Yenesei. Elsewhere throughout the Palæarctic Region it only occurs as an autumn and spring migrant, becoming more and more rare towards the eastern limits of its range. Although in certain countries the Red-wing is said to be extending its nesting-habitat to the southward, 56° N. lat. would seem to be the southern limit of its breeding-range, so far as is known at present.

In Iceland it appears to breed plentifully. The Rev. H. H. Slater says that it was abundant in the birch-woods (Ibis, 1886, p. 46), and Messrs. H. J. and C. E. Pearson (Ibis, 1895, p. 242) write:—"These birds were plentiful in all suitable localities. We saw more of them in one day near the geysers than we had observed during the whole of three visits to Norway. All the nests found were placed on the ground, some amongst the stems of dwarf birch, others among rocks, although in several instances the birch bushes near were dense enough to have concealed a nest. Most of the young birds had left the nests before the 16th of June, only one nest of young being seen on July 3rd and one of four eggs (fresh) on July 19th."

It is likewise an occasional visitor to Greenland (A. O. U. Check-list N. Amer. B. p. 344). In the Færoes it is not known to breed, but is a regular spring and autumn migrant, arriving in April and May and repassing in September. In Mr. Dresser's 'Birds of Europe' a note by Professor Collett states that it is a common bird in Norway, arriving at Christiania about the middle of April, but preferring, in the interior, the sub-alpine region to the lowland, and breeding numerously on the fjelds from the upper portion of the fir-region up into the birch-region, but also in small numbers in the lower regions, as, for instance, at Smaalehnene. On

the west side of Norway it is found commonly on the sea-coast and up northwards to the Russian frontier. My own experience during two seasons spent in the Sundal and Groedal valleys in Sundalen is that the altitude at which the Red-wing breeds varies according to the nature of the season. Thus, in the late season of 1896, when the snow remained long, the Red-wing nested in the pine-woods of the lower valleys, while none were to be seen in the birch-forests of the upper fjelds; whereas in 1897, when the season was early, a number of nests were to be found in the latter region.

"In Russian Lapland," writes Pleske, in his work on the Fauna of the Kola Peninsula, "the Red-wing is a very common object, but seems to have a somewhat local distribution. It is decidedly a bird of the sub-alpine districts, and is only found in such localities at the sea-level or up to a certain height.

"Middendorff found the species common up to 68½° N. lat. in Russian Lapland, Malm in the Kola district, and Lilljeborg at Schuretzkaja on the frozen sea. I found them to be pretty common at Musselga station and in the neighbourhood of Kola. In the southern part of the district, Lagus observed the species in Kunsamo, Newton in Torneå-Lappmark, and Von Wright during his Lapland journey on Aavasaksa, at Tengeliö, and near Alkkula. At Muonioniska it is supposed to breed plentifully in the forest region, according to Palmèn,—arriving about the 8th of June and breeding in the same month. At Karesuando, Von Wright has seen the Red-wing, and Grape at Utsjoki; and Malm states that single examples have been observed in Enare as early as the 10th of May. In East Finmark the species has been found very plentifully by Leem, Collett, and other observers; and Sommerveldt states that throughout the country the Red-wing is common in spring, summer, and autumn; while Collett noticed these birds in large numbers between the Porsanger Fjord and the Russian frontier."

In Sweden it is only found in the high north during the summer, according to Nilsson, but it is said to have nested on Gottland twice, as recorded by Pastor Holtz.

Near Archangel, Henke states that the Red-wing is a common summer visitor (Seebohm, Ibis, 1877, p. 376), and it doubtless breeds in many districts of Northern Russia, and, according to Sabanaeff, throughout the province of Perm. Taczanowski informed Mr. Dresser that it probably nests in the Government of Su-waki in Northern Poland, as it undoubtedly does in Eastern Prussia in the neighbourhood of Memel. Mr. Hartert (Ibis, 1892, p. 358) writes:—"The northernmost part of East Prussia, near the fortress of Memel, is perhaps the only place in Germany where this Thrush used to breed regularly; and there is every reason to believe that it does so at the present time. About fourteen years ago it was not very rare there, and several nests and eggs were obtained, the latter being now almost all in the late E. von Homeyer's collection and in my own. In a few cases it has been found breeding in Germany out of East Prussia, but these are probably exceptions. It passes through in enormous numbers, chiefly in October and in the first half of April, but is not seen in winter." Dr. Reichenow (Syst. Verz. Vög. Deutschl. p. 4) states that it has been found nesting in the Allgäuer Alps in Bavaria; and Pässler is the authority for the nesting of the species in Anhalt, as Count Casimir Wodzicki is for the same in Galicia (*cf.* Dresser's 'Birds of Europe,' ii. p. 39).

On the Petchora River, in North-eastern Russia, Seebohm and Harvie-Brown found the Red-wing as far north as 68° N. lat. "In the valley of the Yenesei," writes Seebohm, "it reached the Arctic Circle on the 5th of June, a few days before the Fieldfare, and soon began to breed in the willows and birches, generally nearer to the ground than the Fieldfare did. In 71° N. lat., beyond the limit of forest-growth, it was still common, but breeding on the ground. I took several of its nests on the sloping banks of the tundra, a little further north than any of the five other species of Thrushes which I found in the same valley. I never found it breeding in colonies; but sometimes,

in an unusually swampy part of the forest, where the pines were small and stunted, several nests would occur at comparatively short distances from each other. In Lapland, as well as in Russia and Siberia, I found the Red-wing commonest where the trees were small, and where open swampy ground separated the forest into plantations. The richness of the foliage in these localities and the brilliance and profusion of the wild flowers reminded me of an English garden run wild; and the presence of the Red-wing and other song-birds assisted in the reminiscence, and added greatly to the charm." Mr. H. L. Popham says that he "found the present species very numerous in the forests of the Yenesei, often nesting among the large colonies of Fieldfares, but nearly always at a lower elevation than the latter birds."

To the eastward of the Yenesei valley the Red-wing is scarcely known to occur. Taczanowski (Faune Orn. Sibir. Orient. p. 314) states that Middendorff procured a single example in the environs of Irkoutsk, the Warsaw Museum possesses a pair from Oussolje, and Radde killed a pair in the valley of Koultouk on the 14th of November, 1855. It has not been seen in Kamtschatka nor in China or Mongolia, and therefore the statement indulged in by some authors, that the range of the Red-wing reaches from the Atlantic to the Pacific, seems to rest, up to the present time, on somewhat slender foundation. Seebohm, indeed, has corrected his statement that the "principal breeding-range of the Red-wing is at or near the Arctic Circle throughout the Palæarctic Region" (Hist. Brit. B. i. p. 220), by afterwards recording it as a West Eurasian species, which does not extend beyond 110° E. long. (Address Yorkshire Nat. Union, p. 17, 1893).

Przewalski only once met with the species at Gaos in Western Zaidam, at the end of October 1884 (Pleske, Wissensch. Result. Przew. Central-Asien Reisen, Zool. ii. p. 6, 1889).

To the British Islands and to the greater part of Europe the Red-wing is principally known as a winter visitor, though Schlegel believed that it had bred occasionally in Groningen and Noord Holland (*cf.* Blaauw, Notes Leyden Mus. xv. p. 188), and it has also been said to nest in Great Britain. Its range extends to Algeria in winter, and it is recorded as having occurred in the Canary Islands. To the countries east of the Mediterranean it is a rare visitor, and has not been noticed in Palestine or Egypt, but is recorded as a somewhat sparse migrant in winter to Persia and Turkestan. Jerdon states that the Red-wing has been found, though very rarely, in the North-west Himalayas, and, on the authority of Lieut. Trotter, Blyth has recorded the species as a regular winter visitant to Kohat, where it occurs in large numbers. No specimen, however, has been procured by any naturalist in recent times, and not a single example is in the Hume Collection, so that the occurrence of the species in N.W. India must be received with caution.

The following account of the species is taken from Seebohm's 'History of British Birds':—

"The winter haunt of the Red-wing is, as a rule, the most cultivated parts of the country—well-wooded parks, pleasure-grounds, and shrubberies, and the adjoining pasture-lands. When once these birds arrive in a certain district, they usually remain there throughout the time of their sojourn in this country—roosting in one certain favourite place, feeding on certain pastures, and, in fact, as regular in their habits and movements as the Rooks themselves. The favourite haunt of the Red-wing is a sheltered valley down which a little brooklet runs, with trees scattered here and there, and tall hedge-rows of thorn and hazel. They are very partial to small parks thickly timbered and studded with clumps of white-thorn trees, with here and there a cluster of hollies or a dense shrubbery, whither they repair at nightfall to roost. They prefer districts where the evergreens are dense and plentiful—laurels, yews, and hollies a century old or more, and the intervening space between them taken up by thick under-wood and forest trees, and where huge sycamores, elms and beeches, oaks and horse-chestnut form a regular labyrinth of arboreal seclusion. They feed on the lands adjoining, pasture and turnip-fields, stubbles and meadows, with here and there a 'summer fallow.' In a district like this, from October to April, the Red-wing is a common bird. In the daytime they frequent the pastures; and

when the dusk is falling they seek the evergreens of the gardens and shrubberies. Regularly every year the birds will come, and, if they are not molested, remain stationary throughout the winter, giving animation by their presence to the landscape, and filling the wintry air with their cheerful pleasing notes. But the Red-wing has other haunts, quite as dear to it as those in our own land. In spring the Red-wings seek the northern forests for the purpose of propagating their species. In Scandinavia they frequent the fir- and birch-woods. Here amongst these scattered forests, which lie at the feet of the high stony ranges of the fells, the Red-wing finds a summer home. Wild and romantic are its breeding-grounds—plains and valleys, meadow and cultivated land, and dells covered with the marsh-loving alder and willow and birch trees growing in wildest luxuriance. Vast morasses, rivers, inland lakes whose margins are fringed with a heavy growth of various reeds and sedges, forest lands, meadows and plains are the features of the ever-changing landscape. In such wild and secluded regions as these, the border land between forest and fell, the Red-wing breeds, far from those busy haunts of men which the bird delights to frequent so confidingly when the blasts of winter render its northern home untenable.

"The migrations of the Red-wing form a prominent feature in its life-history. When the woodlands are painted with the ruddy hues of autumn and the corn is garnered, the first flocks of the Red-wing may be looked for. They come to our islands during the latter days of October—although their arrival is very irregular: for occasionally Red-wings come in the opening days of the month; yet in other seasons not a bird has arrived until the first week in November, the state of the season possibly influencing their movements. Red-wings, like Song-Thrushes, perform their migrations under the cover of darkness. On the clear starlight nights of October their peculiar call-notes may be often heard as the birds flit across the sky above, invisible of course in the gloom. The Red-wing's early arrival on our shores, as compared with that of the Fieldfare, is attributable to two causes. In the first place Red-wings are more susceptible to cold than Fieldfares; and, secondly, they are more exclusively insectivorous. At their arrival Red-wings are exceedingly shy and wary; but after a few weeks this natural shyness of disposition is overcome, and they are then one of the most trustful members of this charming family of choristers. Towards the latter end of March the Red-wings visibly decrease in number, and as the month of April approaches they rapidly leave us for the north; flock succeeds flock; and by the middle of the month few are left behind.

"Red-wings remain perhaps later on their feeding-grounds than any other British Thrush. As you wander over their favourite pastures at nightfall, when most other birds have gone to rest, you will often flush the Red-wings from their evening meal. Here and there they rise from the herbage, uttering their plaintive whistling note, fly quickly off, and are soon lost in the gloom. If disturbed on the pastures in the daytime they rise irregularly, and when in the air there is none of that uniformity or precision of movement observable which is so characteristic of the Common Starling. They pass through the air on rapid wing, often at a considerable elevation; and their flight is rather undulating, being performed by a series of quick flappings, with short intervals between, when the wings are closed, and during which they descend a little out of the direct line of flight. Sometimes, however, Red-wings perform *en masse* the most graceful evolutions in the air, almost like a flock of Starlings. This is usually the case when they are disturbed from their roosting-places. They wheel and manœuvre in the air, and pass round amongst the topmost branches of the forest trees, occasionally dipping near to the earth or alighting on the top of some tall tree, until the cause of the disturbance vanishes, and they can seek their nightly perches in peace. As a rule, except when a flock is going to roost, the Red-wing is not a noisy bird; and when a whole tree-top is covered with them only one or two notes will be heard. How different from a flock of Starlings or Bramblings! who seem to delight in making as much noise as possible when congregated together.

"The food of the Red-wing, during its winter sojourn in the British Islands, is composed of worms, snails, beetles, various insects, and berries. The birds feed on the open pastures, and never resort to bushy places, or the ground under hedgerows and near walls, as the Song-Thrush does; nor is it seen in gardens, unless on the evergreen trees and shrubs, or when hard pressed for food. The partiality of the Red-wing for worms and insect food is no doubt the primary cause of its permanent residence in one certain neighbourhood throughout the period of its stay; and the bird is not nearly so much a berry-feeder as is supposed. True, upon their arrival we find them regaling themselves on the fruit of the service-tree; but this only occurs for a few weeks, and then for the most part they are only seen on the grass-lands. As a proof of this fact, the actions of the Red-wing in the severe winter of 1879–80 may be adduced. The lands which they most love to frequent are the marshy meadows in which worms and insects occur so plentifully. As these marshy places began to freeze, the Red-wings were more and more confined in their feeding-range. Each little swampy place was searched for food, and as surely abandoned when the frost closed it. Manure-heaps were then visited by the distressed birds, until a heavy fall of snow buried these places deep beneath it. All this time the Red-wings were becoming poorer in condition, more feeble, and still more tame and confiding. But the frost still continued, and they repaired to the banks of running streams and brooklets; numbers perished; numbers were caught by hand; and eventually they disappeared from many districts altogether, having most probably joined the vast flocks of their congeners that were incessantly passing over the snow-covered landscape in a direct line southwards. Nevertheless the bushes and hedgerows abounded with berries, the Fieldfares seemed scarcely to suffer from the frost, and were always to be seen feeding upon them. It can be only as a last resource, therefore, that the Red-wing becomes a berry-feeder, except in the autumn when the luscious fruit of the service-tree is ripe. Its winter food is worms and insects; and where these are to be found the birds will only repair to the bushes and trees when alarmed or in order to roost. The Red-wing also feeds on various species of snails. It is a pleasing sight to watch a flock of these birds searching the grass-lands for food. How nimbly they hop amongst the frosted grass, ever in motion, thorough Song-Thrushes in attitude and action, occasionally taking short flights or starting up to look warily round. They are scattered over the entire field, and each is busy searching for its food. If alarmed they fly off in small parties and take refuge in the topmost branches of the nearest trees, and, when the danger is passed, leave their elevated perching-places in the same manner. First one will fly boldly down; others follow, and so on, until the whole flock is again feeding as before. One or two birds sometimes remain behind in the trees near to which the main flock is feeding. These do duty as sentinels, and utter alarm-notes on the approach of danger, at which the birds take wing. Even if fired at, the Red-wing will soon return to its favourite feeding-ground.

"The rich wild notes of the Red-wing are always pleasant to the ear as they are borne hither and thither by the breeze. True, the song may not be so varied as that of the Song-Thrush, nor so rich and powerful as that of the Blackbird, nor yet so wild and free as the 'Storm-cock's' lay; but it has a rich sweetness about it which justly calls forth the praises of all who have had the pleasure of listening to its strain. Its low warbling song is usually preceded by whistling call-notes, or a few guttural cries, as the bird sits on the topmost spray of a pine-tree.

"The breeding-season of the Red-wing commences early in June, fresh eggs being found by the first week in that month, although in high latitudes nests are often found containing newly-laid eggs in the middle of July. Though the Red-wing does not usually nest in colonies like the Fieldfare, still it seems to prefer the society of its larger and more powerful relation; for whenever a colony of Fieldfares establish themselves, there, almost as surely, a pair of Red-wings will build their nest close to them. In districts where trees abound, the Red-wing seems to show preference for the small

firs, where it builds its nest at no great altitude and close to the stem; but occasionally it will build upon the ground at the foot of the tree, instead of in the branches. As is the case with the nests of all Thrushes, it passes through three distinct stages before completed. The birds form a loose nest of moss, dry grass, and a few fine twigs intertwined, the better to bind the materials together. This structure is then lined and plastered with mud or clay; and finally a thick lining is made of fine dry grass, and sometimes a few rootlets. It is neatly made, and somewhat resembles the nest of the Ring-Ouzel, though it is smaller and perhaps more firmly put together. The eggs of the Red-wing are from four to six in number, most frequently the former, and cannot be easily confounded with the eggs of other British Thrushes, on account of their smaller size. The streaks or spots generally almost hide the ground-colour, and are evenly distributed over the entire surface. The usual colour is a pale bluish green, thickly marbled over the entire surface with greenish brown. Some specimens have the spots dispersed in irregular streaks and blotches, like miniature Blackbird's eggs; in others the ground-colour is almost clear, except at the large end of the egg, where a zone is formed of confluent brown spots; whilst others are almost clear pea-green devoid of all markings. They vary but little in size or shape, and are never large enough to be mistaken for small specimens of the other eggs of this group of birds, which they resemble in colour. They vary in length from 1·1 to 0·9 inch, and in breadth from 0·8 to 0·7 inch. Song-Thrush's eggs are often found as small; but their peculiar tints prevent the slightest confusion. As is the case with the Song-Thrush, the Red-wing exhibits the greatest anxiety when its nest is approached, especially should it contain young birds. Throughout the whole laying- and hatching-season the Red-wing continues in full song; his warbling strains are heard constantly and from all parts of his haunts; at all hours his melody floats on the air, as though he were loth to lose a moment of the short sunny Siberian summer."

Adult male in autumn plumage. General colour above olive-brown, darker and slightly suffused with russet on the forehead and crown; lores nearly black; ear-coverts darkish olive-brown, each feather slightly paler in the centre; eye-stripe buffish white, very conspicuous and extending to the nape; wings and wing-coverts brown, the outer web of each feather more or less broadly margined with olive-brown; greater wing-coverts obscurely margined with chestnut-brown and with ill-defined pale tips; tail olive-brown, the outer feathers with obscure pale margins to the inner webs. General colour of the underparts very pale buff, shading into white (or white, slightly suffused with chestnut) on the belly and into rich chestnut on the flanks; the chin, the centre of the lower throat, and the centre of the belly are unspotted; the cheeks, the upper part of the upper breast, and the lower part of the lower throat and the upper flanks have clearly defined, very dark brown, fan-shaped terminal spots on each feather, which are paler and obscurely defined on the feathers of the breast and lower flanks; under tail-coverts white, the basal half of each feather margined with brown; axillaries and under wing-coverts rich chestnut. Bill dark brown, shading into brownish-yellow on the basal half of lower mandible.

Wing with the third and fourth primaries nearly equal and longest; second primary intermediate in length between the fourth and fifth; bastard-primary 0·56 to 0·35 inch.

Total length 8·5 inches, wing 4·85 to 4·45 inches, tail 3·5 to 3·0 inches, culmen 0·86 to 0·78 inch, tarsus 1·25 to 1·15 inch.

Nestling. Greyish-brown above, the feathers in the middle of the back with ovate ochraceous spots; head uniform brown with a slight olive tinge; white eyebrow very distinct, with tufts of yellowish-buff down above it; lores black; ear-coverts blackish, with a patch of ochraceous streaks; above the eye a slight indication of a blackish line; cheeks striped with white, extending down the sides of the neck; under surface of body white; black malar line very distinct; fore-neck and chest

tinged with ochre, with distinct black spots, much smaller on the breast and sides of body, which are tinged with rufous; under wing-coverts rufous, with uniform mesial streaks on upper wing-coverts; scapulars rufescent: bill livid horn-colour, more fleshy below, with yellowish-white tip; feet pale flesh-colour; claws horn-brown; soles yellowish flesh-colour.

The description of the plumage of the adult bird is copied from Seebohm's fifth volume of the 'Catalogue of Birds in the British Museum.' That of the nestling is taken from a bird which I caught in Norway in June 1897, as it flew from the nest. After taking a description of it, I let the little creature fly back to its anxious mother, who betrayed the utmost concern at the capture of her offspring. [R. B. S.]

TURDUS MUSICUS, *Linn.*

SONG-THRUSH.

La petite Grive, Briss. Orn. ii. p. 205 (1760).
Turdus musicus, Linn. Syst. Nat. i. p. 292 (1766); Seebohm, Cat. Birds Brit. Mus. v. p. 191 (1881); id. Hist. Brit. B. i. p. 213 (1883); B. O. U. List Brit. B. p. 1 (1883); Lilford, Col. Fig. Brit. B. part i. (1885); Saunders, Man. Brit. B. p. 3 (1889); Sharpe, Handb. Brit. B. i. p. 263, pl. xxii. fig. 1 (1894).
Grive appellée La Litorne, D'Aubent. Pl. Enl. iv. pl. 406.
La Calandrotte, D'Aubent. Pl. Enl. iv. pl. 490.
La Grive, Montb. Hist. Nat. Ois. iii. p. 280 (1775).
Turdus iliacus (nec Linn.), Bodd. Tabl. Pl. Enl. p. 24 (1783).
Turdus pilaris (nec Linn.), Bodd. Tabl. Pl. Enl. p. 29 (1783).
Sylvia musica, Savi, Orn. Tosc. p. 211 (1827).
Turdus minor, Brehm, Vög. Deutschl. p. 382 (1831).
Turdus philomelos, Brehm, Vög. Deutschl. p. 382 (1831).
Merula musica, Selby, Brit. Orn. i. p. 162 (1833).
Song-Thrush, Yarrell, Brit. B. i. p. 193 (1843).
Iliacus musicus, Des Murs, Traité d'Ool. p. 292 (1860).
Hylocichla musicus, Ridgw. Proc. U.S. Nat. Mus. iii. p. 224 (1881).

T. caudâ olivascenti-brunneâ : axillaribus et hypochondriis aurantiaco-fulvis : supercilio pallido obsoleto : maculis pectoralibus nigris triquetris.

The Song-Thrush is an inhabitant of the Western Palæarctic Region, extending eastwards to the Yenesei Valley, but becoming gradually rarer in Eastern Siberia. It breeds throughout the greater part of this area, in which, however, it is also an extensive spring and autumn migrant. In the British Islands it nests almost universally, but has not been known to breed in the Shetlands. In Ireland, according to Mr. Ussher, "it nests commonly in every county, but more sparingly in the extreme west, as in Valencia, Achill, the Mullet, and Western Donegal, where it is chiefly known as a winter visitor" (Proc. Roy. Irish Acad. (3) iii. p. 402, 1894). With regard to its migrations, Professor Newton writes as follows:—"Towards the end of summer, our native Thrushes receive a considerable accession in number from the birds that arrive from the north; but in most localities these strangers depart after a short sojourn, and are accompanied by the great bulk of the home-bred birds. Sufficient of the latter, however, remain throughout the year to give rise to the general belief that in Britain at least the Song-Thrush is not a migratory species, though its seasonal movements have long been noticed, and in some parts of this island it may be stated as a fact that not a single bird can be seen from the end of November to the end of January or beginning of February." It is said that specimens of the Song-Thrush from the Hebrides are darker in colour and smaller in size than those from the mainland.

The Song-Thrush has occurred as a straggler in the island of Jan Mayen. In Norway and

Sweden it is a plentiful summer visitor, reaching to or a little beyond the Arctic Circle in the former country. In his work on the Fauna of the Kola Peninsula, Dr. Pleske writes :—"The species occurs only in the southern part of the country, and is, as a rule, not found above the limits of the pine-woods. Von Wright found a nest with young birds at the foot of Aavasaksa on the 17th of June. Palmén-Sahlberg observed the Song-Thrush several times in the Muonio parish, where it breeds sparingly. According to the observations of Knoblock, published in Westerlund's work, it is pretty common at Muoniovaara, where it probably inhabits the Sub-alpine Region. In Torneå-Lappmark the complement of eggs is laid by the end of May or the beginning of June. Mela reports that the Song-Thrush is common in summer near the Imandra Lake in Russian Lapland. The reputed occurrence of the species in Enontekis, chronicled by Grape, seems to me to be untrustworthy."

Near Archangel the Song-Thrush is a tolerably common summer visitor, according to Henke (Seebohm, Ibis, 1882, p. 376), and its breeding-range is said to extend to 60° N. lat. in Russia and Siberia. The Seebohm Collection contains specimens from the neighbourhood of Krasnoyarsk, obtained by Mr. Kibort in May and September. Further eastward, the Song-Thrush has been found nesting near Lake Baikal and on the Irkout River by Godlewski and Dybowski. Middendorff also found it nesting not uncommonly near Udskoi-Ostrog. The species has not yet been met with in Dauria, nor in the Ussuri district, or the shores of the Japanese Sea, or in Kamtchatka (Taczanowski, Faune Orn. Sibir. Orient. i. p. 317).

Over France, Germany, and the greater part of Europe the Song-Thrush is distributed during the summer, and it nests in the Pyrennees, where Mr. Howard Saunders has seen eggs in the Basque Provinces (Ibis, 1884, p. 369). He believes that only a small number remain to breed, but at Santander Colonel Irby found the species common and nesting (Ibis, 1883, p. 12). In Spain, as in most of the Mediterranean countries, it is a plentiful visitor in winter, but none have been known to breed even in the higher wooded regions of the Sierra Nevada, according to Mr. Howard Saunders's notes. Mr. Tait says that he has only found it in winter in Portugal, and believes that it does not breed in that country, as he says that he has "looked for it without success during summer in the northern Serra do Gorez, which would be the most likely place if it lingered anywhere in the country" (Ibis, 1887, p. 84). It is very plentiful in winter in Algeria, Tunis, and Morocco, and Mr. Meade-Waldo (Ibis, 1893, p. 187) says that it is an abundant winter visitor to the high ground in the Canary Islands, but he does not remember to have seen it lower than about 1800 feet; a few remain till April.

To Italy the Song-Thrush is principally known as a winter migrant, but not a few breed in the highest mountains, according to Count Salvadori's note in Mr. Dresser's 'Birds of Europe' (vol. ii. p. 22). With regard to its nesting in Greece, we have only Von der Mühle's belief that it breeds in Rumelia, but Lindermayer considers it to be only a winter visitor. Robson states that the Thrush breeds in the large woods in Turkey in Europe and Asia (*cf.* his note in Dresser's 'Birds of Europe'), and also comes in large numbers in winter, at which season it is found in Palestine and Egypt, ranging into Nubia and occurring also in Northern Arabia.

The Song-Thrush breeds in the Caucasus, but is not recorded from Turkestan, and it winters in Persia, occurring at Bushire and at Fao in the Persian Gulf, where it has been obtained by Mr. W. D. Cumming as late as March (Sharpe, Ibis, 1886, pp. 482, 495).

The present species is replaced in China by a resident bird, *Turdus auritus*, which has larger spots below and a more distinct black crescent on the ear-coverts. The Gould Collection contains a specimen, said to have come from Focchow, which has been referred to the latter species, but I find on examination that it is really an example of an English Song-Thrush, and some mistake has doubtless occurred as to the locality.

The following account of the habits of this species is extracted from Seebohm's 'History of British Birds':—

"The Song-Thrush is a skulking bird, although not perhaps so much so as the Blackbird. It is extremely fond of hiding under dense thickets and the broad close foliage of evergreens where the branches sweep the ground. It is here that the birds obtain much of their food; and in some cases regular paths are made through the dense underwood, especially behind walls or hedgerows, which often put you in mind of a weasel's 'run.' Indeed the Song-Thrush is, of all other birds, perhaps the most frequently caught in the 'figure of four' traps set for weasels, owing to its peculiar habit of hopping under the brushwood. Like the Blackbird, it is flushed with difficulty when in these situations, and always prefers to hop quickly along the ground rather than take wing. When flushed, it flies rapidly away, and alights suddenly, as though anxious to enter the nearest suitable cover and hide itself as quickly as possible. The Song-Thrush is more often seen above the tree-tops than the Blackbird, and will take long and rapid flights to and from its feeding-grounds at some elevation, seldom uttering a note. It becomes unusually vociferous towards evening; and its chattering cry is heard well into the night. In autumn, or, perhaps, still more the last few fine days before winter fairly sets in, its garrulity is the greatest. Then in the wooded depths of its roosting-place you hear its sharp cry, almost like the noise made by a ratchet-drill, which it keeps up as it flits from place to place long after it begins to be dark, and when most other birds have retired to rest. Upon the ground the Song-Thrush proceeds in a series of hops, seldom if ever running or walking. His attitude when in the act of listening intently is with the wings drooping slightly, tail almost horizontal, and head slightly raised; but he never elevates his tail upon alighting, like the Blackbird does.

"In our own country, as soon as the days of summer decline and autumnal tints appear in the landscape, the Song-Thrush is seen in little companies; and as autumn passes away, and the fogs and chilly nights of November arrive, the birds nearly all take their departure, and where they once swarmed only one or two solitary individuals are to be seen. The Rivelin valley, a few miles from Sheffield, is annually the scene of an unmistakable migration of the Song-Thrush. Late in autumn the birds for a few days literally swarm in the Rivelin copses, where at all other times of the year they are absent altogether, or nearly so. Although the birds abound here so plentifully they are not at all gregarious: social they may be; yet each seems to confine itself to its own affairs, to fly off alone, and apparently to live by itself. By the latter end of January or the beginning of February, when the first faint signs of approaching spring are seen, the Song-Thrushes are back once more in their old haunts. There can be little doubt that they migrate, like the Red-wing, in the night; for one day not a bird is to be seen in their favourite haunts, but the next their mellow varied song fills the air. Instantly upon their arrival they are in full song, and pairing begins at once. Heligoland is an excellent post of observation for seeing the migration of the Song-Thrush. On the eastern side of this interesting little rock are the 'throstle-bushes.' The island contains scarcely any trees or shrubs, and is for the most part laid out in potato-patches. These 'throstle-bushes' are erected by the inhabitants, and have a net on one side, into which the poor Thrushes are driven with lanterns and sticks the instant they alight. By the side of these artificial bushes the Heligolanders watch on favourable nights for the arrival of the birds. Aeuckens, the bird-stuffer there, related to me with great gusto how, suddenly, a rush and whirl of wings would be heard, and, without a moment's warning, the throstle-bushes would swarm with Thrushes, not dropped, but as if shot like an arrow from a bow perpendicularly down from the invisible heights of mid-air. The number of Thrushes thus caught is almost incredible, it being no unusual thing for several hundreds to be taken in a single night, thus clearly proving to what a very great extent the Song-Thrush is a migratory bird. In our own land we suspect the reason this migration has been

overlooked is from the fact that the birds leave so quietly, and that the Red-wings take their place and are mistaken for them.

"At feeding-time in early morning and evening the actions of the Song-Thrush may be best observed. Watch him hop cautiously from the laurels, just venturing a yard or so upon the lawn, and, with body crouching low amongst the grass, stand motionless for a few moments as if fearful of being discovered so far out in the open. Note well his elegant and sprightly form, his neat trim figure, his richly spotted breast, and large bright eye, as he sits so wary, yet unconscious of your presence. See him at last hop quickly forward and pull out a worm with a jerk from its hole in the earth and swallow it at once. Not a sound escapes him as he hops hither and thither in search of worms, grubs, and snails, or snaps now and then at a passing fly. But your careless movements have alarmed him; he crouches low and timid for a moment, and then takes himself off to the cover whence he came. Although the Song-Thrush does not feed on berries so much as the Blackbird or the Fieldfare, still it eats them freely in autumn and early spring, especially those of the mountain-ash, the hawthorn, and the wild rose. The Song-Thrush is not so much a fruit feeder as the true Ouzels. He eats a few of the wild fruits of the woods, such as the blackberry, raspberry, and wild strawberry, and even visits the garden in cherry-time; but his food is far more animal than vegetable. The Song-Thrush is a large feeder on the snails whose pretty shells are found in almost every hedgerow. In some retired situation you may not unfrequently find little heaps of shell-fragments near large stones and under the hedges. These shells have been broken by the Song-Thrush to obtain the snails within them, and are a silent proof of the bird's usefulness. This bird obtains much of its food amongst the withered leaves and marshy places in woods and shrubberies, and in the autumn frequents the turnip-fields and cabbage-beds in search of snails and grubs. At this season of the year the fields of white turnips especially abound with Song-Thrushes, and you may sometimes flush them at every step. These birds are on migration, only resting here on their journey, and in a few days at most will be again on their way to their winter-quarters. In hay-time the Song-Thrush frequents the newly mown grass-lands near its favourite haunts in search of worms and insects. In all parts of the field they may be seen, some sitting upon the newly mown swathes, others digging away amongst the short herbage. To see them now, the inexperienced observer would think them gregarious birds; but such is not the case, and, as soon as its wants are supplied, each returns to its haunts again, alone and solitary as it came.

"The Song-Thrush delights to sing when the soft summer showers are falling. He will perch among the branches under the broad leaves, or sometimes under a projecting rock, and there warble for hours. He has also been known to sing most vigorously during severe thunderstorms.

"The Song-Thrush is a remarkably tame and confiding bird. It is their music which make him and the Sky-Lark so prominent. At most times of the year he is a skulking bird; but as soon as the first signs of the coming spring warn him to choose a mate, he forgets his life of seclusion. Perching on the topmost branches of trees and shrubs, even on walls and other exposed situations, he then fills the air with his rich and powerful notes—notes so indescribably beautiful, so varied, and continued for such a length of time, as to irresistibly arrest the attention and win the warmest admiration. A peculiarity in the song of this bird, which distinguishes it from the songs of other Thrushes, is that it constantly repeats itself. No sooner has it uttered three or four notes, than, apparently pleased with the combination, it instantly repeats them. Then it tries another quite different combination, which it as constantly repeats. The song has not the rich full melody of that of the Blackbird; but it is infinitely more varied and generally more prolonged. The call and alarm notes of the Song-Thrush are somewhat varied. Its call-note is a peculiar low cry, something like a Red-wing's; its note when alarmed is a harsh guttural cry, more like a low scream than any thing else; and its alarm-notes when its nest is approached, or when disturbed at roost, are harsh

chattering cries, almost like those of the Mistle-Thrush, yet uttered more rapidly, and perhaps more metallic in sound.

"One of the first birds, after winter has passed, to cross a twig as the beginning of its nest is the Song-Thrush. March has scarcely arrived ere we notice the first rude foundation of this charming songster's cradle. We find it in every species of evergreen far more frequently than amongst the branches of deciduous trees:—in the trailing ivy growing on walls or rocks or up the trunks of trees at various heights from the ground; in the dark-mantled yew, the laurel, and, perhaps most frequently of all, in the green branches of the holly. It is also placed on the ground on banks, in whitethorn trees and hedgerows, and more rarely on walls. A favourite situation is against the trunk of a tree, upon a bunch of little branches that partially conceal it. Here the bird may often be seen sitting close, with tail pointing one way and beak the other, each at the same angle to the plane of the nest, and you may pass almost under it or even catch the bird's eye if you walk quietly past, without causing it to leave its eggs. The nest is a bulky structure, and composed outwardly of dry grass, with generally a few twigs and sometimes a little moss. This grass-formed nest is then lined with a thick coating of mud or clay, and sometimes cow's dung, with decayed wood as a final lining. As the Song-Thrush is the only Thrush that lines its nest in this peculiar manner, a detailed description of the process may not be out of place. Decaying fences and tree-roots, or rotten branches torn from the trees by the wintry blasts, are the source from which the bird obtains a supply of this material. When her nest has arrived at a certain stage, the hen bird repairs to this decaying wood for the means of completing her handiwork. She chooses those logs, fences, or roots already well saturated with moisture; or failing to find them in this state, she moistens the wood in the nearest water. Bit by bit it is conveyed to her nest, and there, by the aid of pressure, she moulds it with her body, forming a lining in some instances an eighth of an inch in thickness, and which, from the warmth of the sitting bird, soon becomes hard and dry. Nests are, however, met with where this lining is very scanty—probably from the scarceness of decaying wood. When finished the nest is usually left for a day or so to dry ere the first egg is deposited. Several days are employed in its construction, although in rare instances it is begun and finished in a single day.

"The eggs of the Song-Thrush are four or five in number, and may be readily distinguished from those of any other species of British bird. They are of a beautiful clear greenish blue, marked with small spots of a deep rich brown approaching to black. Eggs of this bird vary considerably, both in size and markings. Many eggs (doubtless the production of the older birds) are exceptionally large; others more resemble the Red-wing's in size. Some eggs (though these are rare) are spotless; others are very richly spotted and blotched with reddish brown and various tints of purplish grey. Eggs that are boldly blotched never have the colouring-matter so intense as those on which the markings are small. They vary in length from 1·16 to 0·95 inch, and from 0·9 to 0·7 inch in breadth.

"The Song-Thrush is a very close sitter, often remaining upon her charge until touched by the hand of some prying naturalist. Her conduct when disturbed from the nest is similar to that of the Mistle-Thrush; her harsh cries and active motions, with those of her mate, awaken the silent woods, and speak most plainly of the anxiety of the birds for their treasure. Both birds sit upon the eggs and young, and tend the latter for a short time after they have left the nest. The Song-Thrush rears two, and occasionally three, broods in the year, a fresh nest in all cases being built for the purpose."

The following is Seebohm's description of the plumages of *Turdus musicus* in the fifth volume of the 'Catalogue of Birds' (p. 192):—

"*Adult male, in autumn plumage.* General colour of the upper parts olive-brown; lores buffish brown; ear-coverts buff, with black tips; eye-stripe buffish white, very indistinct, and soon losing itself behind the eye; wings brown, with pale ochraceous-brown margins to the outer webs; median

wing-coverts conspicuously tipped with rich buff, the greater wing-coverts more obscurely so; primary-coverts with dark tips; tail brown. Chin buffish white; breast and flanks buffish yellow, shading into pure white on the centre of the belly; the feathers of the cheeks, throat, breast, and flanks with black fan-shaped terminal spots, which are generally entirely obsolete on the chin and centre of belly; under tail-coverts white, with the basal half of the margin brown; axillaries rich buff, greyer at the base; under wing-coverts rich buff; inner margin of quills pale brownish buff. Bill dark brown, yellowish at the base of the lower mandible. Wings with the third and fourth primaries nearly equal and longest, second primary between the fourth and fifth, bastard primary 0·6 to 0·5 inch. Legs and feet yellowish brown, claws darker. Length of wing 4·55 to 4·25 inches, tail 3·3 to 2·7, culmen 0·88 to 0·8, tarsus 1·35 to 1·3.

"*Female*. Scarcely to be distinguished from the male.

"The abrasion which takes place during the winter and spring causes the upper parts to be slightly greyer, much of the yellowish buff on the breast and flanks disappears, and the spots on the underparts become smaller.

"*Birds of the year* are more ochraceous than the adults, both on the lores, sides of face, and underparts, especially the latter.

"*Young in first plumage* are yellow above and below, and most of the feathers of the upper parts have pale centres and nearly black tips."

The figures in the Plate represent an adult and young bird, and are drawn from examples in the Seebohm Collection. [R. B. S.]

TURDUS AURITUS, *Verr.*

CHINESE SONG-THRUSH.

Turdus auritus, Verr. N. Arch. Mus. vi. Bull. p. 34 (1870); id. op. cit. vii. p. 31 (1871); id. op. cit. ix. pl. v. (1873); Seebohm, Cat. Birds Brit. Mus. v. p. 103 (1881).
Turdus musicus (nec L.), Swinhoe, P. Z. S. 1871, p. 366.
Hylocichla aurita, Stejneger, Proc. U.S. Nat. Mus. v. p. 464 (1885).

T. similis *T. musico*, sed remige secundo breviore quam sextus, et gastræi maculis nigris triquetris majoribus et valdè conspicuis distinguendus.

The Chinese Song-Thrush is very like our *Turdus musicus* in appearance, but it is distinguished by the larger size of the spots on the under surface of the body, especially on the flanks. The crescentic black mark on the hinder ear-coverts, from which the specific name is derived, is hardly more pronounced than in *T. musicus*, and is not a good specific character. The different proportion of the wings, however, noticed by Seebohm (Cat. B. v. p. 185) seems to hold good, the second primary being shorter than the sixth in *T. auritus*, whereas in *T. musicus* it is longer than the fifth.

Abbé David, who first procured the species, states that he met with it at Moupin, in Western Szechuen, and also at Pekin (David & Oust. Ois. Chine, p. 157). Mr. Styan has also received the species from Szechuen (Ibis, 1894, p. 300). Prjevalski met with it only in Kan-su, which he supposes to be the northern boundary of the species. It inhabited the wooded parts of the mountains and was tolerably common (Prjevalski, in Rowley's Orn. Misc. ii. p. 196). The species is also recorded by Berezowski and Bianchi as having been found by the first-named author in Kan-su (Aves Exped. Potan. Gan-su, p. 99).

The late General Prjevalsky gives the following note on its habits in Kan-su:—"Its song in spring is very pleasant, and exactly like that of our Song-Thrush. We found two nests in the middle of May; one was constructed on the broken stump of a tree, and the other on the branch of a willow; both were about seven feet from the ground. In the former there were four, and in the latter two eggs (an incomplete set). They are quite different from those of *T. musicus*, being rounder, and marked on a dull reddish-white or whitish-grey ground with irregular brown and pale reddish-brown spots and streaks. The larger diameter measures 1″·02–1″·08, the smaller 0″·76–0″·84. The first fledged young we observed on the 30th of June."

Mr. Swinhoe, in his list of the Birds of China (P. Z. S. 1871, p. 366) refers to this species as *Turdus musicus*, and quotes a Foochow specimen in the collection of the late John Gould. He adds:—"I have compared this bird, in company with Mr. Gould, with other specimens of this species. The Chinese bird does show some differences from home-shot examples, but a bird from Malta differs still more." The specimen from the Gould Collection is now in the British Museum, and it is undoubtedly an ordinary Song-Thrush (*Turdus musicus*). Whether it was really obtained in Foochow must remain an open question, but my own opinion is that a mistake has occurred in labelling the specimen. Certain it is that the bird is *T. musicus* and not *T. auritus*, and though there would be nothing improbable in an individual of our Song-Thrush wintering in

Foochow from Western Siberia, I prefer at present to consider the occurrence as of doubtful authority.

A female specimen in the Seebohm Collection, collected by Berezowski in Kan-su, differs from *Turdus musicus* in the larger triangular black spots on the under surface of the body, which are especially distinct on the flanks. Total length 8·7 inches, culmen 0·8 inch, wing 4·75 inches, tail 3·25 inches, tarsus 1·35 inch. [R. B. S.]

TURDUS VISCIVORUS, *Linn.*

MISTLE-THRUSH.

La grosse Grive, Briss. Orn. ii. p. 200 (1760).
Turdus viscivorus, Linn. Syst. Nat. i. p. 291 (1766); Dresser, B. Eur. ii. p. 3, pl. i. (1871); Seebohm, Cat. Birds Brit. Mus. v. p. 194 (1881); id. Hist. Brit. B. i. p. 207 (1883); Lilford, Col. Fig. Brit. B. part i. (1885); Saunders, Man. Brit. B. p. 1 (1889); Sharpe, Handb. Brit. B. i. p. 267 (1894).
La Drenne, D'Aubent. Pl. Enl. iv. pl. 489.
La Draine, Montb. Hist. Nat. Ois. iii. p. 295 (1775).
Missel-Thrush, Lath. Gen. Syn. ii. pt. 1, p. 16 (1783).
Sylvia viscivora, Savi, Orn. Tosc. i. p. 208 (1827).
Ixocossyphus viscivorus, Kaup, Natürl. Syst. p. 145 (1829).
Turdus major, Brehm, Vög. Deutschl. p. 379 (1831).
Turdus arboreus, Brehm, tom. cit. p. 380.
Merula viscivora, Selby, Brit. Orn. i. p. 158 (1833).
Turdus hodgsoni (nec Homeyer), Bonap. Consp. Av. i. p. 269 (1850).
Turdus bonapartei, Cab. J. f. O. 1860, p. 183.
Turdus viscivorus hodgsoni (nec Homeyer), Pleske, Mél. Biol. xiii. p. 292 (1892).

T. caudâ olivascenti-brunneâ: maculis nigris gastræi triquetris: axillaribus albis: supercilio pallido nullo.

The Mistle-Thrush is the largest of the olive-brown-tailed species of the genus *Turdus*, with fan-shaped black spots on the breast. It is distinguished, moreover, from the Red-wing and the Song-Thrush by its white axillaries, and from the former by the further want of the white eyebrow, in addition to the differently coloured flanks.

It is a widely-distributed species in the Palæarctic Region, and for many years the Mistle-Thrush of the Himalayas has been considered to be a different species and has generally been called *Turdus hodgsoni* of Homeyer. As has been pointed out by Seebohm, however (*anteà*, p. 29), the latter name is a synonym of *Oreocincla mollissima*, and could not be used for the Mistle-Thrush of Asia, even if the latter were distinct from its European relative. The Himalayan bird is now generally admitted to be identical with the Mistle-Thrush of Europe, and all that Mr. Eugene Oates, the latest authority on the subject, could find in the way of difference between the two forms was that the Himalayan bird had a slightly longer bill and a wing generally over 6 inches, whereas in European examples the wing is under 6 inches (Faun. Brit. Ind., Birds, i. p. 149).

In the British Islands the Mistle-Thrush is generally distributed and has gradually extended its range, so that it nests at the present time as far north as Caithness and Sutherland and in most of the Hebrides. It has not yet been met with in the Shetlands and is only a straggler to the Orkneys (Saunders, Man. Brit. B. p. 1). In Ireland, Mr. R. J. Ussher says, it breeds in every county, and is believed to be still increasing (Proc. Roy. Irish Acad. (3) iii. no. 8, p. 402).

On the continent of Europe the Mistle-Thrush is well-known as a migrant, and nests in most countries, but only in certain suitable localities in many of them, especially in Southern Europe. It reaches beyond the Arctic Circle in Scandinavia, as Mr. Godman found it breeding near Bodö in 1857. Professor Collett says :—"It is chiefly found in the south-eastern part of Norway, where it generally winters and also breeds. It becomes rare in the province of Christiania, at Nedernæs, near Næs, and Aaseral, and is not known with certainty to occur in the province of Bergen. Above Mjæsen it is rarer, but breeds in Gulbrandsdal, at Lillehammer, and has been observed at Trondhjem, in the Vœrdel. A single individual was observed at Alten, below 70°, in August 1838, by Prof. Sundevall" (Dresser, B. Eur. ii. p. 5). In Sweden, Sundevall says that it is found throughout the country, but is nowhere common: it breeds even in Skåne (Svenska Fogl. p. 49). Dr. Pleske, in his work on the Fauna of the Kola Peninsula, says that it is confined to the southern portion of that country. Middendorff found it common in the interior up to 67°, but Pleske himself did not meet with it there. Von Wright observed it in Torneå-Lappmark, and Palmén found it nesting in various places in the forest-region. Grape has noticed the species still further to the north, viz. in Enontekis. Eggs of the species taken in Lapland are in the Museum at Helsingfors, according to Palmén (Pleske, Syst. Uebers. Säug. u. Vög. Kola-Halbinsel, p. 32). Wolley states that the Mistle-Thrush is by no means common in Lapland, but nests and eggs were brought to him from lat. 68° on the frontiers of Sweden and Finland (Newton, ed. Yarr. Brit. B. i. p. 262). It is a tolerably common visitor to Archangel in summer (Seebohm, Ibis, 1882, p. 376), but it was not met with on the Petchora by Seebohm and Harvie-Brown. We have no account of its range in Russia, though we know from Bianchi that it nests in the Novgorod district, but is rarer than the three other Thrushes found there (Biol. Not. Uschaki Vög. p. 12). It has been known to nest near Sarepta (Seebohm, Ibis, 1882, p. 214), and it breeds also in the forests of the Caucasus. In Turkestan, according to Severtzoff, it breeds in the north-eastern district—Semiratchje, Issik-Kul, the Upper Nasin, Acksay, Kopal, and Vernoe, occurring in these parts also on passage; and in the other districts of Turkestan it breeds and also winters (Dresser, Ibis, 1875, p. 334). According to Dr. Pleske, Russow found the Mistle-Thrush breeding in June at Urjukle-Tau, in the district of Saamin in Turkestan (Mém. Acad. Imp. Sci. St. Pétersb. (7) xxxvi. no. 3, p. 36). During the expedition to Western Siberia in 1876, by Dr. Otto Finsch and his companions, a specimen was obtained by the late Dr. Brehm at Dschasil-Kul in the Zungarian Ala-Tau, at an elevation of 5000 feet, on the 14th of May. Dr. Finsch says further that he himself observed the Mistle-Thrush on the 10th of June on the Tau-Teké Mountains of the Chinese high Altai, and thinks that some young birds seen in the woods of Salair on the 29th of June probably belonged to the present species (Verh. zool.-bot. Gesellsch. Wien, xxix. p. 182). Przewalski found it breeding only on the Tian-shan Mountains (Pleske, Wiss. Result. Przew. Central-Asien Reise, ii. p. 1), and the brothers Grum-Grzimailo also met with it on the Tian-shan at Dsjan-dsjun-gol and Bogdo-ola (Pleske, Mél. Biol. xiii. p. 292). It is not known to breed further eastward, though a few individuals were seen, and one secured in May, at Koultouk, at the south of Lake Baikal, by Dybowski and Godlewski (Tacz. Faune Orn. Sibir. Orient. i. p. 286).

In the Himalayas the species nests from Gilgit to Nepal. Dr. Scully states that in the former locality it occurs above 9000 feet and nests (Ibis, 1881, p. 439); but Colonel Biddulph regards it rather as a winter visitor, coming from the higher valleys in severe weather. He found it breeding at 10,000 feet (Ibis, 1881, p. 207). Colonel C. H. T. Marshall has also noticed it nesting in Chamba, in the Kulatope forests (Ibis, 1884, p. 414).

The Mistle-Thrush winters in Southern Afghanistan and Kelat, being common in winter on the higher hills, according to the late Sir Oliver St. John: it is an occasional straggler to Quetta, but is not seen about Kandahar (Ibis, 1889, p. 162). It is also a winter visitor to Persia.

Returning to the European home of the species, we find that it nests throughout Central Europe in suitable localities, but in many places it is only known as a winter visitant. This is the case in France and Germany and Denmark, and Mr. Hartert says that in Eastern Prussia it breeds twice in the year, but not in large numbers (Ibis, 1892, p. 358). In Poland, according to Taczanowski, it is a common resident (Bull. Soc. Zool. France, 1877, p. 143).

In Belgium it is best known as a migrant, but a few pairs nest in the woods (Fallon, Ois. Belg. p. 38); and in Holland, Mr. Blaauw says that it has been known to breed in the province of Groningen by Prof. Schlegel, and he himself has found nests near Velzen in Noord Holland; in the rest of the country it is only a migrant (Notes Leyden Mus. xv. p. 188, 1893).

In Hungary it nests in the forests and pine-woods (Frivaldsky, Aves Hungariæ, p. 49). In Montenegro, according to Messrs. Reiser and von Führer, the Mistle-Thrush is commoner than the Song-Thrush; but on the coast it is only found here and there (Orn. Balcan. iv. p. 54).

In Switzerland, according to Dr. Fatio and Prof. Studer, it nests everywhere on the mountains and up to the Alpine zone, whence it descends into the low country in the autumn (Cat. distr. Ois. Suisse, 1892, p 27). Mr. Howard Saunders says that in 1891 it was not seen or heard near Lausanne until the middle of March, and he does not think that it is a resident: it was plentiful in the Jura (Ibis, 1891, p. 161).

In Italy, Count Salvadori states that the species is resident and nests on the mountains, as well as in Sicily and Sardinia; in the autumn the birds descend to the low country, and a considerable immigration of individuals from the north takes place (Elench. Ucc. Ital. p. 103). Mr. John Whitehead regards it as a resident in Corsica, but scarce in the island. A few were seen by him in the plains during winter, and he found the species breeding in the mountain-forests in the middle of May, with young fully fledged (Ibis, 1885, p. 36).

Mr. Howard Saunders writes:—"In Southern Spain this species has come under my notice from October to April, and a large number evidently continue their journey southwards; it probably breeds sparingly in the mountains, and it certainly does so north of the Sierra Morena, whence I have eggs. I have also found it nesting in Aragon" (Dresser, B. Eur. ii. p. 6). It appears to breed throughout the Pyrenees, for Colonel Irby noticed it near Santander, and says that it was common in Llebana (Ibis, 1883, p. 179). Mr. Howard Saunders observed it nesting in Navarre in April at an elevation of 3000 feet (Ibis, 1884, p. 368); and Mr. Eagle Clarke states that the Mistle-Thrush was common at Andorra on the highlands, especially among the pines and firs on the mountain-sides, but was not observed below 5000 feet. It was breeding at 6350 feet, the highest altitude at which the species was noted (Ibis, 1889, p. 533). Colonel Irby observes:—"The Mistle-Thrush cannot be said to be common near Gibraltar, being most so in winter. It is considered to arrive and depart with the Woodcocks; but a few pairs nest in the Cork Wood and other wooded districts." They occasionally nest near Tangier, but the species is principally known as a bird of passage in November and February, according to Favier (Irby, Orn. Str. Gibr. 2nd ed. p. 34). Capt. Savile Reid says that he took a nest in Marocco in April, 1884 (Reid, Ibis, 1886, p. 442). Mr. Joseph Whitaker writes:—"I obtained specimens of the Mistle-Thrush in Tunis at the end of March, and again towards the end of April, in the pine-woods to the north of Feriana, where this species no doubt breeds; it is, however, not common in the Regency" (Ibis, 1895, p. 92). Loche states that in Algeria it is not common, and is probably only found during migration.

To Malta the present species appears to come only as a migrant, and cannot be a plentiful visitor, to judge by the few examples recorded by Mr. C. A. Wright (Ibis, 1864, p. 63). Von der Mühle records it as breeding in the high mountains of Rumelia, and it occurs in Southern Greece in winter, as stated by Lindermayer. According to the late Mr. Robson, the Mistle-Thrush breeds

in the large woods in Turkey, but it is never seen in summer in the parks and cultivated grounds near the Bosphorus. They pass through Turkey and Asia Minor in flocks in the middle of October, returning in the middle of April, and many remain for the whole winter (Dresser, B. Eur. ii. p. 6). In Southern Russia and the Crimea it is only a winter visitant, and the species is said to winter also in Persia. In the British Museum is a specimen collected by Mr. L. Barody in the Lebanon, and Canon Tristram says that he also once saw it in the same place in winter. He likewise records his having seen young, which had shortly before left the nest, on the southern spurs of the Taurid, near Marash (Faun. & Flor. Palest. p. 30).

The following account of the habits of the present species is taken from Seebohm's 'History of British Birds':—

"The haunts of the Mistle-Thrush are considerably diversified, the rich, well-cultivated districts and the borders of the moorlands being equally tenanted by them. In the former situation it is usually found in the neighbourhood of large gardens, in orchards, shrubberies, small woods, and plantations, and especially in well-wooded parks and pleasure-grounds. On the borders of the upland wilds it frequents the fir-plantations, wooded roughs, and the banks of mountain-streams and coppices of birch and alder. The Mistle-Thrush is found in Great Britain throughout the year; but it is subject to some little internal migration. For instance, the birds that frequent the upland districts in summer retire to the lower lands in winter; and birds from the more isolated woods and coppices draw nearer to the cultivated districts should the weather be severe. But these remarks apply to our indigenous birds alone. The rigours of a northern winter send the Mistle-Thrush southwards; and considerable numbers of these migrants remain on our shores throughout the winter, arriving at the same time as the Fieldfare, with which bird they often associate. Although for the greater part of the year the Mistle-Thrush is a non-gregarious bird, still in the early autumn, when the breeding-season is over, and the young birds are strong on the wing, a sociable disposition manifests itself. The birds are then seen in little parties; and as the autumn progresses they congregate in considerable flocks, very often being mistaken for early arrivals of Fieldfares. At this season the Mistle-Thrushes are extremely wild and wary, and are usually seen on the turnip-fields or newly-ploughed lands in the early morning, and later in the day on the grass-fields and stubbles. In the turnip-fields they choose the parts where the crop has been cleared off, and, as a rule, do not skulk under the broad leaves, like the Song-Thrush; but they are, nevertheless, easily alarmed, and take wing the instant that danger threatens, rising into the air, and flying from tree to tree, uttering their harsh and grating cries both as they fly and when they are at rest in the tree-tops. As the year begins to wane and the leafless twigs tell of the approach of winter, these bands of Mistle-Thrushes, from some unknown cause, disperse; and for the rest of the winter the birds either live in solitude or congregate in small parties only. Although in the nesting-season few birds excel the Mistle-Thrush in trustfulness, at all other times of the year he is a shy and wary bird, and rarely comes near houses, save when hard pressed for food. Mistle-Thrushes, as a rule, fly much higher than Song-Thrushes or Blackbirds. They are capable of flying with great swiftness, and have considerable command over themselves in the air—witness their motions round the head of an intruder when in the neighbourhood of their nest. At other times they fly with a series of rapid beats with but short intervals of cessation, and with but very little undulation. The Mistle-Thrush when about to alight on a tree usually ascends some little distance to a perching-place. It is a decided inhabitant of trees and shrubs, except when in search of food, which for eight months in the year is found chiefly on the ground. The remaining four months he is for the most part a berry feeder, although, if the weather be mild and open, we find him pretty frequently on the grasslands in company with the Red-wing.

"The Mistle-Thrush is partly graminivorous and partly insectivorous, according to the season of the year. In the spring and summer it is seen on the pastures just as frequently as the Blackbird; but, unlike that species and the Song-Thrush, it never seeks its food under the evergreens and hedgerows, but always in the open. On the grass it obtains earthworms, snails (both those with and those without shells), larvæ of various kinds, and insects. In the late summer, and throughout the autumn, fruit and berries are largely sought after. This fare is obtained in gardens as well as woods, and is composed of cherries, gooseberries, raspberries, and in the upland districts the various moor fruit and the berries of the mountain-ash. The berries of the service-tree in the autumn months are perhaps more eagerly sought after by the Mistle-Thrush than any other food. Where the trees are covered with fruit the birds may be seen incessantly, frequenting them until they are entirely stripped. In late autumn and in early spring, when sowing-operations are in progress, the Mistle-Thrush will frequent the fields and pick up the scattered grain, varying his fare with grubs and insects. In winter the bird is to a great extent a wanderer. Its food is largely composed of berries of the hawthorn; and, like the Fieldfare, it wanders from one district to another. The berry that is perhaps most closely associated with the Mistle-Thrush is that of the famous parasite the mistletoe. Popular opinion regards this waxen berry as the staple food of the 'Storm-cock,' and assumes that the bird is the principal disseminator of this parasitic plant. Pliny even propounded the startling theory that the berries of this plant will not germinate unless they have passed through the intestines of birds, notably that of the Mistle-Thrush! This bird does not eat the berries of the mistletoe to such an extent as is popularly believed. In districts where this plant abounds it is rarely found denuded of its berries, although the Mistle-Thrush may be the commonest of birds in the neighbourhood. The berries of the hawthorn, the ivy, and the service-tree are its staple food in the winter season. It is not at all improbable, however, that when the birds do occasionally eat the berries of the mistletoe, the seeds are disseminated by their clinging to the bill of the bird, who, to rid itself of them, cleans it on the bark, and thus unwittingly places them in some crevice where they eventually germinate. The Mistle-Thrush sings throughout the winter. In early autumn, after being silent throughout the breeding-season, he regains his song, and may be heard to sing until the nesting-season in the following spring. No sooner has this time arrived than the 'Storm-cock' drops its wild melody, and, unlike all its congeners, performs the duties of breeding in silence. The song resembles in some of its tones that of the Song-Thrush and Blackbird; but it possesses a peculiar loudness and wild variation strictly its own, and may, by one who pays attention to the songs of birds, be instantly distinguished from the notes of any other British songster. Like the notes of the Ring-Ouzel, it is somewhat monotonous, but rich and mellow. Before the first streak of dawn shoots across the dull wintery sky, the Mistle-Thrush may be heard pouring forth his wild carol; and in the evening, when the dusk is falling, he sings equally well. But perhaps the time when the 'Storm-cock's' song is heard to best advantage is on some wild day when part of his performance is drowned by the storm. Perched on the leafless branches of a lofty tree, he sits and warbles forth his song amidst the driving sleet and the roaring tempest. Should you disturb the Mistle-Thrush when singing, he usually drops silently down and awaits your departure, though sometimes he merely retires to a neighbouring tree and warbles as sweetly as before. The call-notes of the Mistle-Thrush are extremely harsh and discordant, resembling those of the Song-Thrush, yet infinitely louder and harsher.

"Mistle-Thrushes pair about the first week in February, and at that season they are very pugnacious; and when paired they often frequent the locality of their nest for weeks before a twig is laid in furtherance of it.

"Very probably, on account of its exceptional wariness of disposition, the Mistle-Thrush prefers somewhat different nesting-sites, and, to a certain extent, breeding-grounds, from those of its near allies the Song-Thrush and the Blackbird. Much of this inherent wariness disappears in the breeding-season, and it will frequently rear its young in the most exposed situations. The Mistle-Thrush is an early breeder, commencing in some cases in February; and two (and sometimes three) broods are reared in the season. Its nest may be found on most of the forest trees, and but rarely in the bushes. The birch-copses, larch-plantations, woods, and orchards are its favourite haunts, and in some cases trees standing alone, especially a road-side oak or elm. A favourite situation is in the alder trees bordering a stream, even on the banks of the mountain-torrents on the moorlands. The nest is built at various heights, sometimes only a few feet from the ground, at others near the topmost branches. You never find it in the slender twigs, but either placed on some horizontal bough away from the trunk, or on a suitable fork of the main stem. Instances are known of the bird building in evergreens, only a few feet from the ground; but such cases are exceptions; indeed this species seems to have a peculiar aversion to using evergreens for a nesting-place.

"No other British Thrush exposes its nest in such a seemingly careless manner as the 'Storm-cock'; yet it is surprising how often it escapes detection in its open position until the young are safely reared. This may be partly attributed to the bird's quietness of disposition; for few birds are so silent in the breeding-season, until it is aware that its nest is discovered. Probably few other British birds' nests exceed in picturesqueness the home of this Thrush. There is a peculiar rustic beauty about it which few others possess. Like the nest of the Blackbird (indeed of all the Thrushes), it undergoes three distinct stages before completion. First, the outside is composed of grass, chickweed, bog-moss, and often large masses of wool, through which are artfully woven a few slender twigs to strengthen the sides of the structure. This nest is lined with mud or clay; and, lastly, a very thick lining of grass, usually in a green state, completes the work. No attempt at concealment is made; indeed it seems that the birds rather court discovery than otherwise; for it is no uncommon thing to see a large piece of wool hanging loosely from a nest, or a portion of the nest itself so lightly put together as to cause it to arrest the attention at once. The eggs of the Mistle-Thrush very rarely exceed four in number, and in but very few cases are less. They are somewhat different from the typical Thrush's eggs, being of a greyer tinge. The ground-colour ranges from bluish white to reddish brown, spotted, blotched, and clouded with various shades of rich purplish brown and with greyish underlying spots. They differ considerably in size, form, and colour, very often in the same clutch. They vary in length from 1·32 to 1·03 inch, and in breadth from 0·94 to 0·8 inch.

"Mistle-Thrushes are amongst the noisiest of birds should their nest be menaced by danger. Uttering their harsh grating cries, they fly round the intruder's head and do their best to make him quit its vicinity. No Thrush is bolder or more vigilant; and the Magpie, the Jay, and even the Sparrow-Hawk are often frightened away by the vigour of their attack."

The following description of the plumages of the Mistle-Thrush is taken from Seebohm's fifth volume of the 'Catalogue of Birds':—

"*Adult male in autumn plumage.* General colour of the upper parts greyish brown, the feathers of the rump edged with ochraceous; lores and the feathers behind the eye greyish white; ear-coverts yellowish white, tipped with dark brown; no trace of an eye-stripe; wings brown with pale edges, ochraceous on the outside edges of the secondaries; median wing-coverts with conspicuous greyish-white tips; greater wing-coverts and innermost secondaries with obscure pale tips; tail brown, the outside feathers very conspicuously tipped with white, especially on the

inner webs; two or three other tail-feathers on each side less conspicuously tipped with white. Underparts pale buff, darkest on the breast and flanks, each feather having a black terminal fan-shaped spot, except the under tail-coverts, which are margined with dark brown on the basal half; the spots almost obsolete on the chin and the centre of the belly; axillaries and under wing-coverts pure white; inner margins of quills nearly white.

"Bill dark brown, yellowish at the base of the lower mandible. Wings with the third and fourth primaries nearly equal and slightly the longest, second primary nearly equal to the fifth, bastard primary 1·05 to 0·7 inch. Legs and feet yellowish brown, claws darker brown. Tail with the outside feathers 0·35 inch shorter than the longest. Length of wing 6·55 to 5·4 inches, tail 4·75 to 3 9, culmen 1·1 to 0·88, tarsus 1·4 to 1·24.

"*Adult female.* Scarcely to be distinguished from the male, but is slightly paler above and below.

"The effects of the abrasions which take place during winter and spring are somewhat more conspicuous than usual in this species. The upper parts become greyer and paler; most of the buff and ochraceous tints on the rump, secondaries, and underparts fade away, and the spots on the underparts become smaller.

"*Birds of the year* are slightly more ochraceous than adults.

"The *young in first plumage* are yellower above and below, and most of the feathers of the upper parts have pale centres and black tips."

The figures in the Plate represent an adult and young bird, and are drawn from specimens in the Seebohm Collection. [R. B. S.]

TURDUS MUSTELINUS, *Gm.*

WOOD-THRUSH.

Tawny Thrush, Lath. Gen. Syn. ii. p. 28 (1783).
Turdus mustelinus, Gmel. Syst. Nat. i. p. 817 (1788).
Turdus melodes, Bartr. Trav. p. 290 bis (1791).
Turdus melodus, Wilson, Amer. Orn. i. p. 29, pl. ii. fig. 1 (1808).
Turdus melodius, Bp. Journ. Phil. Acad. iv. p. 33 (1824).
Merula mustelinus, Denny, P. Z. S. 1847, p. 38.
Turdus densus, Bp. Compt. Rend. xxxviii. p. 2 (1854).
Turdus (*Hylocichla*) *mustelinus*, Coues, B. Colorado Valley, p. 28 (1878).
Hylocichla mustelina, Ridgw. Bull. Nutt. Orn. Club, vii. p. 17 (1882).

T. suprà mustelinus : pectore et corporis lateribus maculis nigris triquetris conspicuè notatis.

This species is the type of Baird's genus *Hylocichla*, which includes all the North-American Dwarf-Thrushes, and, according to the recent opinion of American naturalists, some Old-World species as well, such as our Song-Thrush (*Turdus musicus*).

The Wood-Thrush is easily distinguished from the other small American Thrushes by the foxy-red colour of the upper surface and by the black spotting on the sides of the body, all the allied species having uniform flanks. It is one of the forms peculiar to the Humid Province of the Nearctic Region, as pointed out by Dr. J. A. Allen, and its range is given in the 'A. O. U. Check-list' (p. 317) as follows:—"Eastern United States to the Plains, north to Southern Michigan, Ontario, and Massachusetts, south in winter to Guatemala and Cuba. Breeds from Virginia, Kentucky, and Kansas, northwards."

Near Hamilton, in Ontario, Dr. McIlwraith says that the Wood-Thrush is a common summer resident, and is generally distributed over Southern Ontario, arriving early in May and departing in September. "Mr. White," he adds, "has found the species at Ottawa, but in the west I have no record of it at any distance to the north of our southern boundary" (B. Ontario, 1894, p. 405). Mr. W. A. Stearns has stated that he heard the Wood-Thrush repeatedly in Southern Labrador, ten miles up the Esquimaux River, one day late in July (Proc. U.S. Nat. Mus. vi. p. 116); but Mr. Ridgway adds a note (*l. c.*) in which he suggests that the species heard by Mr. Stearns must have been *T. aliciæ*, as *T. mustelinus* is not known to occur so far north even as the southern shores of the Gulf of St. Lawrence. In New England, Mr. Stearns says that the species arrives from the south early in May and departs during October. "It is a summer resident, but is not very abundant, and less so in the northern than in the southern New England States, being decidedly the most southerly of the four common species of its sub-genus. It is one of the species which is practically limited in its northern range by the Alleghanian Fauna, and its presence in New England in midsummer is a good indication that such locality belongs to this Fauna" (New England Bird Life, i. p. 54).

Mr. Goodall (Auk, ii. p. 215) records a young male individual as shot by him at Saco, in Maine, on the 6th of September, 1884; and this he believes to be the first recorded capture of the species

along the coast north of Massachusetts, and the only record for Maine. In the Seebohm Collection, however, is a specimen obtained many years ago by Mr. G. A. Boardman at Calais, in Maine.

Mr. Faxon, in his list of the 'Summer Birds of Berkshire Co., Mass.,' states that the Wood-Thrush was "common at the lower levels and extended high up the beech-forest at the head of the Hooper: it was also found sparingly at other points on the mountains" (Auk, vi. pp. 46, 106). Mr. Witmer Stone found it not common in summer in the Pine Barrens of New Jersey, and confined to the dense cedar-swamps (Auk, xi. p. 140).

In Pennsylvania, Mr. Warren states that the species is an abundant summer resident from about the last week in April to October 1st (B. Pennsylv. p. 223). Mr. Dwight, in his paper on the "Summer Birds of the Pennsylvania Alleghanies," states that it is an abundant species, found in the woods to the highest point (Auk, ix. p. 140). Mr. Todd also says that in Indiana and Clearfield Counties, in the same State, he noticed the bird as common throughout the woodland (Auk, x. pp. 41, 46). In Ohio the Wood-Thrush remains from May to September (Jones, Auk, xii. p. 241). In Indiana it is also a summer resident and breeds (Evermann, Auk, vi. p. 29). The same is the case in the States of Illinois and Michigan, and in the latter it is recorded as a common summer resident on Mackinac Island by Mr. S. E. White (Auk, x. p. 229). In Minnesota, Dr. P. L. Hatch says, the species arrives early in May, the males coming a little in advance of the females. Two broods are reared, and the departure southward takes place about the middle of September (Birds of Minnesota, p. 433).

Prof. Elliott Coues writes:—"This distinctively eastern species ascends the Missouri as far at least as Fort Pierre, in Dakota, and is reported by Dr. Hayden as being quite numerous along the wooded river-bottoms." In S.E. Dakota, Mr. Agersborg says it is very rare, but breeds along the Missouri and Big Sioux rivers (Auk, ii. p. 277). Mr. Allen found it exceedingly abundant in Eastern Kansas, but not beyond (Coues, B. N.-West, p. 2).

Turning eastwards again, we find the Wood-Thrush included among the breeding birds of the district of Columbia by Mr. Richmond (Auk, v. p. 25), and it is found in Virginia in summer (Rives, Auk, iii. p. 160). In Kentucky it is also a summer resident (Pindar, Auk, vi. p. 316); and the same is probably the case with the State of Tennessee, where Mr. Langdon procured specimens in August on the Chilhowee Mountains at elevations ranging between 2000 to 4000 feet. Mr. Fox reports it as rather common in Roane Co. in April (Auk, iii. p. 315). In Western Missouri Mr. Scott found the species quite common and first noticed it on the 1st of May: it bred in small numbers (Bull. Nutt. Orn. Club, iv. p. 140).

In South Carolina, according to Mr. Loomis, the Wood-Thrush is rather common in summer as well as on migration (Bull. Nutt. Orn. Club, iv. p. 210). He also found it quite plentiful on Cæsar's Head in South Carolina in June (Auk, viii. p. 333). In western North Carolina Mr. Brewster records it as abundant and generally distributed, ranging from the lowest valleys to at least 4500 feet on the mountain sides, and breeding everywhere, but most numerously in the thickets of rhododendrons near streams (Auk, iii. p. 178). At Coosada, in Alabama, Mr. Brown states that the Wood-Thrush arrived on the 12th of April in full song, but was never very common, inhabiting only swampy thickets and hard-wood groves (Bull. Nutt. Orn. Club, ii. p. 169). In his paper on birds observed on the Lower Mississippi in the summer of 1881, Mr. Hay says that it appeared to be abundant, and individuals were seen and shot at Memphis and Vicksburg (Bull. Nutt. Orn. Club, vii. p. 160). Mr. Beckham observed it common in the woodland of Bayon Sara, in Louisiana, in April (Bull. Nutt. Orn. Club, vii. p. 160).

In Florida the Wood-Thrush is chiefly known as a rare spring and fall migrant to the Gulf coast, according to Mr. W. E. D. Scott (Auk, vii. p. 119), and he says the same of the species in the Caloosahatchie region (Auk, ix. p. 214). Specimens collected by him at Tarpon Springs in

April are in the Salvin-Godman Collection. Mr. Wayne has found the species breeding in the Wacissa and Ancilla districts of Florida (Auk, xii. p. 366), and he heard a bird singing in April on the Suwanee River.

Mr. Nehrling (Bull. Nutt. Orn. Club, vii. p. 6) says that in South-eastern Texas the Wood-Thrush arrives from the north early in October, but is not common in the winter months, inhabiting swampy thickets and bottom woods. Specimens collected by Mr. F. B. Armstrong at Corpus Christi and Brownsville, in April and October, are in the Salvin-Godman Collection.

The line of migration of the present species appears to be by Eastern Mexico to its winter home, but it has been recorded by Lawrence (Bull. U.S. Nat. Mus. no. 4, p. 11) as having been found by Sumichrast near Tehuantepec city on the Pacific side. Messrs. Salvin and Godman, in the 'Biologia Centrali-Americana' (Aves, i. p. 9), give the following localities for the species, to which are added some other instances of its occurrence in Mexico, based upon specimens in the Salvin-Godman Collection in the British Museum:—Tampico, Feb. (*W. B. Richardson: spec. in Mus. S.-G.*), Colipa (*F. D. Godman: spec. in Mus. S.-G.*), Vega del Casadero (*M. Trujillo: spec. in Mus. S.-G.*), Teapa, Vera Cruz (*D. W. Smith: spec. in Mus. S.-G.*), Cordova (*Sallé*; Sclater, P. Z. S. 1856, p. 294), Jalapa (*De Oca*; Sclater, P. Z. S. 1859, p. 362), Orizaba (Sumichrast, Mem. Bost. Soc. Nat. Hist. i. p. 543), Tierra Caliente of the Atlantic (*Le Strange*), Tabasco (Bp. C. R. xxxviii. p. 2).

Specimens from Orange Walk and Cayo in British Honduras, obtained by Dr. F. Blancaneaux, are in the Salvin-Godman Collection, and Dr. G. F. Gaumer obtained many examples during the winter months in the islands of Cozumel and Mugeres (Salvin, Ibis, 1888, p. 242). In Guatemala Messrs. Salvin and Godman state that the most western point at which they met with the species was Godines, "a small village 7000 feet above the sea, situated in the mountains at the eastern end of the upland lake of Atitlan; here it was observed in February 1874. In the neighbourhood of Coban, in Vera Paz, it is, during the winter months, a very common bird; and it may be found in the second-growth woods, especially wherever a mountain-stream runs" (Biol. Centr.-Amer., Aves, i. p. 9).

Leyland procured a specimen at Omoa in Honduras (Moore, P. Z. S. 1859, p. 55), and Mr. Dyson also met with the species in that country, some skins of his preserving being in the British Museum. More recently Mr. Underwood has obtained a single example of this species on the Volcano of Miravalles in Costa Rica (Ibis, 1896, p. 482). In Nicaragua Mr. Richmond says he heard the species several times on the Escondido River, and noticed it first on November 7 (Proc. U.S. Nat. Mus. xvi. p. 482). In the Seebohm Collection is a skin said to have come from Veragua, but it bears no indication of the collector, and there has probably been some mistake as to the locality.

According to Mr. C. B. Cory, the Wood-Thrush is occasionally found in Cuba, and it has been recorded from Jamaica; but its occurrence in the latter island is questioned (Auk, iii. p. 1), and Mr. Scott did not meet with it during his expedition to Jamaica (Auk, x. p. 342). Mr. Ridgway has recorded a specimen from New Providence in the Bahamas, obtained by the Naturalists of the 'Albatross' on the 16th of April (Auk, viii. p. 335).

Mr. Nehrling has given a good account of the species in his work on North American Birds:—"It is found chiefly in low damp woodlands which are thickly covered with undergrowth, and prefers for settlement the shady interior to the noisy and busy neighbourhood of man. It loves the deep half-darkness of the forest-solitude with its peace and quietness. Here one can hear the wonderful, harmonious, flute-like song from early dawn till the fall of the evening twilight. Although usually selecting low woods for its home, it seems to love equally well high mountain regions. In the mountains of North Carolina and elsewhere it loves to nest in the grand evergreen rhododendrons (*R. catawabiense*, *R. punctatum*).

"I found it most abundant in the woods bordering the streams and creeks of Northern Illinois. There it prefers for its breeding-place pieces of woodland containing masses of dense thickets. In my native State—Wisconsin—the Wood-Thrush is a somewhat shy bird, which regularly breeds in deep forest recesses, but in Northern Illinois it departs considerably from such habits, and although not breeding in gardens near to man, I occasionally found nests in woods close to an orchard. In the East nests have been repeatedly found in gardens, and my friend Mr. O. Widmann informs me that this bird often nests even within the city limits of St. Louis.

"The Wood-Thrush rarely appears in its northern home before the middle of May—often some days later—at the time when the first flower-buds open upon the apple-trees. It usually remains for the first few days after its arrival in dense undergrowth. Were it not for hearing repeatedly the far-sounding delightful 'Eolie' or 'Hallowlee,' one would hardly know that this famous vocalist had returned home again. Besides this common song-like call it utters a low 'tuck' or 'tack' and a quickly reiterated 'tuck tuck tuck tuck,' which is especially frequent after its arrival and is perhaps intended as a love-call to its mate. Only when it sings does it perch on a tree-top and pour forth its exquisite song. Usually it selects such a seat at a considerable distance from the nest, and returns to it very often. When disturbed it suddenly dives into the underwood.

"Formerly this Thrush nested very abundantly in the woods along the Calumet and Des Plaines River near Chicago. These woods consist mostly of oaks, tall elms, lindens, black walnut and ash trees. Dense hawthorn bushes, intertwined with wild grape-vines and virgin's bower (*Clematis virginica*), Juneberry trees, dogwood, elder, black haw, hazel-copses and beautiful wild crab-trees, make up the underwood, which stands in clustered masses, forming dense thickets with sunny openings here and there. In these rather damp places our vocalist chooses his regular domicile.

"In their northern habitat these birds commence nest-building usually in the first week in June. All the nests I found were from four to six, more rarely as high as fifteen feet from the ground. The first and only nest near a human dwelling I found June 17th, 1876, at River Forest (Illinois), about a quarter of a mile from Des Plaines River. It was placed in a wild crab-tree (*Pyrus coronaria*) growing on the edge of the woods right at the back of an orchard, and was about thirteen feet from the ground. All the other nests discovered by me were more in the depths of the woods. In the following year I found the nests particularly numerous in that part of the forest (then called Hase's Park) traversed by the Des Plaines River. It was a beautiful piece of woodland, since converted into large cemeteries. Here I found this Thrush more common than ever before, even more abundant than the Robin. Excepting the Cat-bird, the Wood-Thrush was here the most frequent nesting species. In a part of the woods comprising about one and a half acres, partly shaded by broad-spreading forest-trees where the thickets were crowded together, I found in three hours three nests of this Thrush. Two were in the immediate neighbourhood of an extensive, much tangled thicket, in which there were also two Cat-birds' and a Black-billed Cuckoo's nest. One structure on the east side of the thicket was very near a Cat-bird's nest. It was placed on a small tree about five feet from the ground, and contained three eggs. The structure was very loosely built of grass-stems, bark-strips and dead leaves; in the inside of this was placed a cup of black mud lined with delicate rootlets and a few grass-blades. It contained three greenish-blue eggs. The second nest on the north side of the thicket was hardly fifty steps from the first. It was placed in a small hawthorn about six feet from the ground and contained only two eggs. It differed but little from the first. The third nest I discovered on the 'Indian Mound,' a little elevation in the woods said to have been a burial-place of the Indians. This nest was situated in a dense black haw (*Viburnum pruneifolium*), about six feet from the ground, and contained four uniformly greenish-blue eggs. It was much more carefully constructed than the other two, though composed of the same materials. The sitting female was so tame that I almost touched her with

my hand before she started from the nest. Without a cry of distress she disappeared in the shrubbery and noiselessly returned when I had stopped. Strange to say, the male did not make his appearance in the neighbourhood of the nest.

"In Wisconsin the Wood-Thrush prefers to build in young white pine and hemlock copses. Here the structure is usually from four to eight feet from the ground, close to the trunk on a horizontal branch.

"Like all species of the genus, the Wood-Thrush is one of the most useful of birds. The bulk of its food consists of insects, especially of all kinds of worms, caterpillars, grasshoppers, &c., which it looks for on the ground. It eats all kinds of berries too, especially such as grow in its bushy home. The young are fed with insects only. The male assists its mate but little in building the nest, and does not help at all in brooding. He has to participate actively, however, in bringing up the young. As there is only one brood in the North in a season, the young are under the protection of the parents long after they have left the nest. The whole family seems to keep regularly together till the time for their migration. Then a few families from the neighbourhood collect, and some time between the middle and latter part of September they all start off on their journey southward.

"They appear in the coast-region of Texas, according to my own observations, in great numbers by the beginning of October, at the time when the cones of the *Magnolia grandiflora* glow invitingly with their wealth of beautiful vermilion aromatic seeds. The flesh of these Thrushes is said to acquire a peculiarly delicious flavor from this fruit, on which account many thousands are annually killed by the creoles of Louisiana, where these and other species of this family, as well as the Towhee Bunting, are commonly called 'grassets.'"

Mr. Stearns has an interesting note on the species in his 'New England Bird Life':—"The favourite localities of the Wood-Thrush are the borders of dense thickets, or low damp hollows shaded by large trees, yet its habits are by no means so retiring, or its nature so timid, as these places of resort would lead us to infer. A small grove in Roxburg, now a part of Boston, in close proximity to a dwelling-house, was for many years the favourite resort of these birds, where several pairs nested and reared their young, rarely even leaving their nests, which were mostly in low bushes, wholly unmindful of the curious children who were their frequent visitors. The same fearless familiarity was observed at Mount Auburn, then first used as a public cemetery. But in the latter instance the nest was always placed high up on a branch of some spreading tree, often in a conspicuous place, but out of reach. Mr. J. A. Allen refers to several similar instances where the Wood-Thrush did not show itself to be such a recluse as many describe it. In one case a pair built their nest within the limits of a thickly-peopled village, where there were but few trees and a scanty undergrowth. In another a Wood-Thrush lived for several successive summers among the elms and maples of Court Square in the City of Springfield, Mass., undisturbed by the passers-by or the walkers beneath, or the noise of the vehicles in the contiguous streets.

"The song of this Thrush is one of its most remarkable and pleasing characteristics. No lover of sweet sounds can have failed to notice it, and, having once known its source, no one can fail to recognize it when heard again. The melody is one of great sweetness and power and consists of several parts, the last note of which resembles the tinkling of a small bell, and seems to leave the conclusion suspended. Each part of its song seems sweeter and richer than the preceding.

"The nest is usually built on the horizontal branch of a small forest-tree, six or eight feet from the ground, and, less frequently, in the fork of a bush. The diameter is about 5 inches, and the depth $3\frac{1}{4}$, with a cavity averaging 3 inches across by $2\frac{1}{4}$ in depth. They are firm, compact structures, chiefly composed of decayed deciduous leaves, closely impacked together, and apparently thus combined when in a moistened condition, and afterwards dried into a firmness and strength like that of parchment. These are intermingled with, and strengthened by, a few dry twigs, and the

whole is lined with fine roots and a few fine dry grasses. Occasionally, instead of the solid frame of impacted leaves, we find one of solidified mud.

"The eggs of the Wood-Thrush, usually four in number, sometimes five, are of a uniform deep-blue tint, with but a single admixture of yellow, which imparts a greenish tinge. Their average measurements are 1·00 by ·75 inch."

Mr. Bicknell writes of this species in his paper on the "Singing of Birds" (Auk, i. p. 128):—

"This most admirable song-bird is in voice from its arrival, in late April or early May, until about the middle of August. But towards the end of July singing becomes less universal with members of this species, and soon after has come to be inconstant and confined to the earlier and later hours of the day. Songs are usually to be heard through the first week of August, and sometimes for a week later (August 6–15), when singing ceases somewhat abruptly, seven or eight weeks before the final departure of the species.

"After the cessation of singing these Thrushes become shy and inactive, affecting the most retired parts of woods, and only the careful observer will discover that they have not disappeared. Even their call-notes have almost been discontinued, and when heard are so low in tone and so brief as almost to seem as if accidentally uttered. Before their departure, however, though they do not again sing, voice is partially regained; and in October, even so late as the middle, or rarely last of the month, their call-notes may sometimes be heard uttered with the same vehemence as in the spring.

"The suspension of song by this bird during two months preceding its departure can be accounted for, according to the probabilities earlier adduced, by physiological activities antagonistic to song operating during that time. In late August adults are covered with growing feathers and without fat. In mid-September some, at least, show a nearly perfected plumage, with areas of fat beginning to accumulate; and individuals may be found almost a month later with the renewal of plumage still incomplete; such, perhaps, are birds of the year. It would appear from these facts that the impulse to song is first interrupted by the moult, and further suppressed by the supervening adipose condition."

The following description is copied from Seebohm's fifth volume of the 'Catalogue of Birds':—

Adult male in spring plumage. General colour of the upper parts russet-brown, shading into orange-chestnut on the head and into olive on the rump and upper tail-coverts; lores grey; ear-coverts brown, with pale centres; no trace of eye-stripe; wings and wing-coverts brown, the outside webs of the feathers russet-brown; tail olive-brown, the tips of the feathers narrowly margined with white. Underparts white, with a slight shade of buff on the lower throat, each feather (except on the chin, centre of upper throat, centre of belly, and under tail-coverts) having a conspicuous very dark-brown fan-shaped terminal spot, paler and obscurely defined on the lower flanks; axillaries white, with brown centres; under wing-coverts white with brown bases; inner margin of quills pale brown. Bill reddish brown, paler at the base of the lower mandible. Wings with the third and fourth primaries nearly equal and longest; second primary sometimes shorter, sometimes longer than the fifth; bastard-primary 0·9 to 0·45 inch. Legs, feet, and claws pale brown. Total length 7·5 inches, culmen 0·8 to 0·7, wing 4·45 to 3·85, tail 2·9 to 2·5, tarsus 1·28 to 1·12.

The *female* does not appear to differ from the male, nor are the colours much brighter immediately *after the autumn moult*. *Birds of the year* have traces of pale tips to the greater wing-coverts. *Young in first plumage* are described as having pale yellowish shaft-lines to the small feathers of the upper parts and pale ochraceous tips to the wing-coverts.

The figures in the Plate are drawn from a Mexican specimen in the Seebohm Collection.

[R. B. S.]

TURDUS FUSCESCENS, *Stephens.*

WILSON'S THRUSH.

Le Mauvis de la Caroline, Briss. Orn. ii. p. 212 (1760).
La Grivette d'Amérique, Montb. Hist. Nat. Ois. iii. p. 289 (1775).
Little Thrush, Latham, Gen. Syn. ii. p. 20 (1783).
Turdus minor, Gm. Syst. Nat. i. p. 809 (1788).
Turdus mustelinus (nec Gm.), Wilson, Amer. Orn. v. p. 98, pl. 43 (1812).
Turdus fuscescens, Stephens, in Shaw's Gen. Zool. x. p. 182 (1817); Coues, Key N. Amer. B. p. 73 (1872); id. B. N.-West, p. 6 (1874); Baird, Brewer, & Ridgw. Hist. N. Amer. B. i. p. 9 (1874); Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 10 (1879); Seebohm, Cat. Birds Brit. Mus. v. p. 203 (1881); A. O. U. Check-l. N. Amer. B. p. 317 (1895); Ridgw. Man. N. Amer. B. 2nd ed. p. 574 (1896).
Turdus silens, Vieill. Enc. Méth. ii. p. 647 (1823, nec Swains.).
Turdus wilsoni, Bp. Journ. Philad. Acad. iv. p. 34 (1824).
Merula minor, Swains. & Richards. Faun. Bor.-Amer., Birds, p. 179, pl. xxxvi. (1831).
Merula wilsoni, Brewer, Proc. Bost. Soc. Nat. Hist. i. p. 191 (1844).
Turdus brunneus, Brewer, Journ. Bost. Soc. Nat. Hist. vi. p. 304 (1852).
Turdus (Hylocichla) fuscescens, Coues, B. Color. Vall. p. 39 (1878).
Hylocichla fuscescens, Ridgw. Proc. U.S. Nat. Mus. iv. p. 207 (1881).

T. minor: caudâ rufescenti-brunneâ, dorso concolore: hypochondriis et axillaribus clarè cinereis: gulâ fulvescente, maculis pallidis fuscis triquetris ornatâ.

This little Thrush is called by American ornithologists the "Veery," the "Tawny Thrush," and "Wilson's Thrush." It may be recognized by its grey flanks and uniform "tawny-brown" (*Ridgway*) or "russet-brown" (*Seebohm*) colour, the tail being of the same tint as the back. The throat is pale buff, with very light dusky spots.

It is a species of the eastern United States, and extends beyond the frontier into British North America. Prof. Elliott Coues says that it extends north to Hudson's Bay and west to the Saskatchewan (B. N.-West, p. 6). It reaches to Southern Labrador, where Audubon saw young birds on the 20th of July (Turner, Proc. U.S. Nat. Mus. viii. p. 235), and Mr. Brewster met with it on Anticosti towards the end of July (Proc. Bost. Soc. Nat. Hist. xxii. p. 368). To the Magdalen Islands it is a common summer visitant, according to Dr. Bishop (Auk, vi. p. 149).

It doubtless nests in Newfoundland and in Nova Scotia, a specimen from Halifax shot by Lieut. Wedderburn on the 25th of March, 1852, being in the Seebohm Collection, having been purchased from the Jardine Collection; it is now in the British Museum. Dr. McIlwraith says that, with the exception of *Merula migratoria*, this is the most common of the Thrushes which visit Southern Ontario and breed there, many passing further north to nest (B. Ontario, p. 407). In Manitoba it is an abundant summer resident, according to Mr. Thompson (Proc. U.S. Nat. Mus. xiii. p. 633). Captain Blakiston writes (Ibis, 1863, p. 54):—"A specimen from the Lower Saskatchewan,

mentioned in the 'Fauna Boreali-Americana' as *Merula minor*, and another from Red River Settlement in the Smithsonian Institution, place Wilson's Thrush as an inhabitant of the region; but for my own part I did not obtain a specimen."

From Pembina Mr. Ridgway records a specimen as belonging to the true *T. fuscescens* (Proc. U.S. Nat. Mus. iv. p. 376), and Mr. Agersborg says that the species is a rare summer resident in S.E. Dakota, but he did not find the nest (Auk, ii. p. 277).

Dr. Hatch states that Wilson's Thrush is a fairly common bird in Minnesota, and is apparently widely distributed over the State, nesting about the last week in May (B. Minnes. p. 435).

In Wayne Co., Ohio, it is, according to Mr. Oberholser, the least numerous of the transient Thrushes, and has only been observed in 1892, when it was seen in May near Wooster, in the valley of the Killbuck. A specimen has also been taken in spring near Orrville (B. Wayne Co. p. 337). Mr. White says that it is common on Mackinac Island, in Northern Michigan, from July to September (Auk, v. p. 229), and it also nests in the State of Iowa (Allen, Mem. Bost. Soc. Nat. Hist. i. p. 493; Coues, B. N.-West, p. 6).

In Pennsylvania Mr. Warren regards the present species as a common migrant in spring and autumn (B. Pennsylvania, p. 249), but it breeds on the Pennsylvanian Alleghanies, as Mr. Dwight found it tolerably common about Cresson and in the valley at Altoona in summer. It was not met with on the North Mountain itself, but was seen in the valley eastward (Auk, ix. p. 140). Mr. Baily says that in Northern Elk Co. one was seen above Straight Creek, and appeared to be nesting (Auk, xiii. p. 297).

In the New England States Mr. Stearns says that the "Veery" is the commonest of the Thrushes, always excepting the Robin, in Southern New England during the season. Like the Wood-Thrush, it is characteristic of the Alleghanian Fauna at such times, though it also extends sparingly into the Canadian, where the Hermit and the Olive-back are so abundant and characteristic. It enters Connecticut about the last week of April, and reaches Massachusetts early in May (New England Bird Life, i. p. 60). In Berkshire Co., Mass., Mr. Faxon found the species common in the lower cleared portions of the country, and observed it at least as high as 2000 feet from the sea-level on the cleared portions of the mountain side (Auk, vi. p. 106). Mr. Brewster has also noticed it nesting near Winchenden (Auk, v. p. 389). It also breeds in Maine (Verrill, Proc. Essex Inst. iii. p. 146), and was found by Mr. Batchelder on the Upper St. John River, nesting at Grand Falls in June, but rare in that neighbourhood. At Houlton it was a common breeding species (Bull. Nutt. Orn. Club, vii. p. 108). Dr. Chadbourne has found it on the White Mountains in New Hampshire in summer (Auk, iv. p. 107), and Messrs. Faxon and Allen at Squam Lake and Franconia in June (Auk, iv. pp. 153, 155).

In the other Eastern United States the present species occurs as a migrant, though Prof. Elliott Coues believes that some may winter in South Carolina (B. N.-West, p. 6). Mr. Brewster records the nesting of the Veery near Highlands, in Western North Carolina, where, he says, Mr. Boynton has repeatedly found the nest. It was abundant over the elevated plateau about Highlands, and scarcely less numerous on the Black Mountains, ranging in both localities from about 3500 to 5000 feet (Auk, iii. p. 178).

Wilson's Thrush appears to be a rare migrant in Texas, and the only example which I myself have seen from that State is *T. salicicola*. Mr. Attwater obtained a specimen near San Antonio on the 18th of May (Auk, ix. p. 344). In Houston Co., Mr. Nehrling observed a few during the fall migration (Bull. Nutt. Orn. Club, vii. p. 7). Dr. J. C. Merrill also met with it at Fort Brown on the 1st of January, 1877 (Proc. U.S. Nat. Mus. i. p. 119).

Mr. J. A. Allen has recorded the species as a winter bird in Florida (Bull. Mus. C. Z. ii. p. 256), and Mr. Atkins has found it common at Key West on the Gulf coast of Florida on the 28th of

April and the 2nd of May; while in the Caloosahatchie region it is a regular migrant (Scott, Auk, vii. p. 119, ix. p. 214).

A single specimen from "Mexico" is in the Seebohm Collection, but no authentic occurrence of the species in that country has been recorded, as Sumichrast's identification of Wilson's Thrush near Orizaba (Mem. Bost. Soc. Nat. Hist. i. p. 543) is doubtful (Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 10). It visits Cuba in winter (Cory, Auk, iii. p. 2), and has been obtained by Dr. G. F. Gaumer rather plentifully in the islands of Cozumel, Bonacca, and Ruatan (Salvin, Ibis, 1888, p. 243). A single specimen has been procured near San José in Costa Rica, in October 1889, as recorded by Mr. Cherrie (Auk, vii. p. 337).

In Panama it has been once obtained by McLeannan (Lawr. Ann. Lyc. N. Y. vii. p. 326), and Messrs. Salvin and Godman have seen a specimen from Aspinwall in Mr. Boucard's collection (Biol. Centr.-Amer., Aves, i. p. 10). Mr. H. Whitely met with the species at Camacusa in British Guiana in April (Salvin, Ibis, 1885, p. 196), and Mr. Wickham also procured an example at Santarem on the River Amazon (Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 10). Four specimens were obtained at San Vicente in Brazil by Natterer (Pelzeln, Orn. Bras. p. 92), and Mrs. Herbert Smith also met with the species at Chapada in Matto Grosso in November and February, as recorded by Dr. J. A. Allen (Bull. Amer. Mus. iii. p. 341, 1891).

A specimen of a small Thrush, believed by Gätke to be this species, was obtained in Heligoland in 1833, but the record cannot be considered satisfactory (Gätke, Helgol., Engl. ed. p. 244).

Prof. Elliott Coues has given the following interesting account of the habits of *Turdus fuscescens* (B. Color. Vall. p. 39):—"The Veery's mating and nest-building season, when the bird is in full song, is the genial month of May, in most parts of the United States; and two broods may be reared under propitious surroundings. But further northward, where alone have I myself found the bird in its home, and heard its seductive epithalamium, the shorter span of the summer season suffices but for a single brood. The yearly crisis of the bird's life is delayed till June, and the young are not seen abroad until the latter end of that month, if indeed before July. The heavy growth of timber that fringes the streams includes many nooks and dells, and broken ravines overgrown with thick shrubbery, from out the masses of which the tall trees tower, as if stretching forth their strong arms in kindly caressing of the humbler and weaker vegetation, their offspring. In such safe retreats, where the sombre shade is brightened here and there with stray beams of sunlight, in the warmth of which myriads of insects bathe their wings and flutter away their little span of life, humming a quaint refrain to the gurgle of the rivulet, the Veery meets his mate—the song rises—the wooed is won—the home is made. Should we force our unwelcome presence upon the bird who is brooding her newly-found treasures with the tenderest solicitude, she will nestle closer still, in hope of our passing by, till we might almost touch her; when, without a word of remonstrance or reproach, she takes a little flight, and settles a few yards away, in silent appeal. If the time, the place, the scene, suffice not for our forbearance, with what poor words of hers may we then be moved?

"The nest will be found at our feet, most likely beneath some bush, resting upon a bed of leaves, or supported in the forks of some stems which spring directly from the ground. It seems large for the size of the bird, and perhaps not so neat and finished as we might expect; for the Veery, though a patient and faithful housekeeper, cares little for appearances. Among the various materials which enter into its composition, withered leaves form a large part, especially of the outer walls, while grass-stems, weed-stalks, and bark-strips are more compactly woven inside. There is no special lining of the interior, and the cavity is small. The nest may contain four, perhaps five, eggs, like those of the Hermit-Thrush, greenish-blue, without marking, except in rare instances, when a few specks appear, especially about the larger end.

"Varyiug estimates have been made of the Veery's powers of song. For myself, I rate this bird as one of the sweetest of our songsters, of whose 'clear bell-like notes, resonant, distinct, yet soft and of indescribable sadness,' I have spoken on a former occasion. I think Dr. Brewer's faint praise the most cruelly unjust of all; can he ever have heard the Veery's full utterance, and then have written: 'The song of this Thrush is quaint, but not unmusical; variable in its character, changing from a prolonged and monotonous whistle to quick and almost shrill notes at the close'? He speaks as he might of a hurdy-gurdy, instead of an exquisite oboe. No one of the voices of the woodland is less quaint than the Veery's; no one is truer to its theme, more measured in its cadences, or softer and clearer in its tone than that of the Veery—rival of the Olive-back, the Hermit, and the Wood-Thrush, completing the quartette of silver-tongued *cantatrices*, who pledge the promises of spring-time in choral symphony."

Mr. Nehrling's notes are as follows:—"According to my experience the Veery is shy and circumspect, more retiring and fonder of solitude than the Wood-Thrush, and consequently rarer in woods often frequented by man. As a rule it is found only in the deepest seclusion. It chooses for its haunts and nesting-place more swampy and damper spots than its congener, the Wood-Thrush. It may be said that the last-named species inhabits the high and low woods, Wilson's Thrush the damp woods, and the Hermit the swampy woods of middle and northern Wisconsin, notwithstanding that all three species sometimes occur close together. The Veery's home is in one of the most delightful and beautiful parts of the woods. It is always found in the neighbourhood of water, either close to a rushing rivulet wandering under thick shrubbery, near a thick gurgling spring, or a pond. In such places vegetation is always luxuriant and dense, with here and there open spots overgrown with moss, ground-pine (*Lycopodium*), and winter-green (*Gaultheria procumbens*). The admirer of the beauties in nature is struck by the wonderful forms of magnificent ferns, especially *Osmunda cinnamomea*, *Calapogon pulchellus*, *Spiranthes*, *Cypripedium*, &c., the varied orchids (*Arethusa bulbosa*) rising from the peaty ground in full splendour, the curious pitcher-plant (*Sarracenia purpurea*), the numerous huckleberry bushes covered with lovely bell-shaped flowers, the many different blossoms along the edge of the stream, from among which the dazzling red, and later the blue lobelias (*Lobelia cardinalis* and *L. syphilitica*) shine forth with the greatest brilliancy. The large wide-spreading forest-trees overshadow whole thickets of cranberry, wild gooseberry, dogwood, and other bushes. In the region of mixed woods, the pine and hemlock thickets greatly heighten the charms of the scene. In the sunlight falling through the high trees myriads of mosquitoes, gnats, and other water-loving insects hover. The whole forest ground is covered with old, completely moss-grown logs which have almost turned to soil. One sinks almost to the knees into the decomposing mass, which is the very life-spring of the rich plant-growth. Except in the hummock woods of Florida, I have never seen such beautifully luxuriant vegetation. This is the true home of our Veery. Here the female finds her mate, who has arrived a few days earlier; here the beautiful song sounds through the forest, here the nest is built, and the young raised. In this silent solitude the Veery must be sought, if the friend of nature, and especially of bird-life, would make its acquaintance. Care, however, is taken by the endless swarms of blood-thirsty mosquitoes that man shall not enter this seclusion with impunity. I think it is just the haunts chosen by this Thrush that are the cause of its being considered rarer than it really is.

"The Veery is one of the most exquisite songsters of its forest solitude. It is in truth a rival of the Hermit, the Olive-back, and the Wood-Thrush. One hardly knows to which to award the palm. In many respects the Veery's song reminds one of the Wood-Thrush, but it is not so loud and flute-like, and seems to be more modulated. The bird sings so diligently that it is often heard long after sunset. Hence in some places in New England the bird has been called the 'Nightingale.'

The sounds 'woit, woit' are often distinctly heard in the song, and these are especially uttered very powerfully and with wonderful harmony. All our present ornithologists praise the song of the Veery. Prof. R. Ridgway, who heard it in the mountains of the West, describes it as really inspiring, the song consisting of an inexpressibly delicate metallic utterance of the syllables *ta-weel'ah*, *ta-weel'ah*, *twil'ah*, *twil'ah*, accompanied by a fine trill which rendered it truly seductive."

The following note is taken from Mr. E. P. Bicknell's paper on the "Singing of Birds" (Auk, i. p. 129) :—

"Contrary to what we find to be true of most of our summer birds, Wilson's Thrush seems often to remain silent for some days after its arrival in the spring; although this is not invariably the case. Though it comes to us but little later than the Wood-Thrush, its song in some years may not be heard until two weeks after that of the latter bird; and yet we lose it fully a month earlier. With Wilson's Thrush singing continues regularly through the month of June and into the early part of July, but after this time is not commonly heard, and soon has entirely ceased. For several years dates of final songs have been entered in my books between July 10 and 15; though a single song may sometimes be heard later in the month. July 21, 22, and 26 are the latest dates that I have recorded. Often in the first, or even the second week of July, though singing is so soon to cease, the vocal impulse seems to be at its height, and our thick swamps and low woods sound with the continually reiterated songs of numbers of these fine-voiced Thrushes. These birds are so much oftener heard than seen that after they have become silent they are not often observed; but not until the end of September have they all left us.

"By the end of August the plumage has been renewed and the birds are very fat. But specimens may be taken at this time, and, indeed, through September, showing a slight activity of feather-growth."

The following descriptions are taken from specimens in the British Museum:—

Adult male. General colour above rufous or tawny-brown, the head like the back, and the rump and upper tail-coverts also rufescent like the rest of the back; wing-coverts like the back, the quills light dusky-brown, externally like the back, or slightly paler on the edges of the primaries; tail dusky-brown, washed with reddish-brown, so that it is almost exactly of the same tint as the back; lores and feathers in front of and round the eye ashy-whitish; ear-coverts light dusky-brown, with a tinge of rufous, and faint shaft-streaks of ashy-fulvous; cheeks and entire throat pale tawny-buff, whiter towards the chin, which is unspotted; on the lower throat and fore-neck some small triangular spots of dusky-brown; the cheeks separated from the throat by a moustachial stripe of dusky-brown spots; remainder of under surface of body white from the fore-neck downwards, and including the under tail-coverts; the sides of the body clear dusky-grey, with a few indistinct spots of the same colour. Total length 6·8 inches, culmen 0·7, wing 3·8, tail 2·75, tarsus 1·1.

Adult female. Similar to the male. Total length 7 inches.

Old birds after their autumn moult are scarcely to be distinguished from their spring plumage, but may be a little more tawny-buff on the throat and have a slight shade of the same colour on the sides of the body. The females generally, but not invariably, show the spots on the throat less distinctly marked.

When the plumage becomes worn in the breeding-season, the russet-tint of the upper surface disappears to a great extent, and the bird becomes browner. It then becomes very difficult to distinguish *Turdus fuscescens* from the race which Mr. Ridgway has named *T. salicicola*.

Young birds after their first moult may be distinguished by the very distinct tawny spots on the ends of the median and greater wing-coverts, and these are often pronounced in specimens

killed in May, on the return of the species to its breeding-quarters. These young birds are decidedly more rufescent on the throat and flanks than older individuals; the spots being slightly more distinct on the sides of the breast; under wing-coverts white, with ashy bases; axillaries ashy like the sides of the breast; quills ashy below, paler ashy along the edge of the inner web, and showing a pale buff patch near the base of the quills.

Nestling. Much darker than the adults, and profusely spotted with large centres of orange-buff, especially on the rump and upper tail-coverts; the sides of the face and throat bright orange-buff, mottled with broad blackish edges to the feathers; the white breast also profusely mottled with dusky crescentic bars at the end of the feathers, the sides being washed with orange-buff.

The figures in the Plate are drawn from specimens in the Seebohm Collection from Detroit, Michigan. [R. B. S.]

TURDUS SALICICOLA (*Ridgw.*).

WILLOW-THRUSH.

Turdus fuscescens (nec Steph.), Baird, B. N. Amer. 1858, pp. 922, 927 ; et auct. recent. (spec. ex Americâ septentrionali-occidentali).
Turdus (*Hylocichla*) *swainsoni* (nec Cab.), Coues, Bull. U.S. Geol. Surv. iv. no. 3, p. 550 (1878).
Turdus (*Hylocichla*) *fuscescens*, Coues, ut suprà, p. 550 (1878).
Hylocichla fuscescens salicicola, Ridgw. Proc. U.S. Nat. Mus. iv. p. 374 (1882).
Turdus fuscescens salicicola, Coues, Key N. Amer. B. 2nd ed. p. 246 (1884).

T. similis *T. fuscescenti*, sed obscurior: suprà magis olivascens, nec rufescenti-brunneus, maculis gutturalibus conspicuoribus: hypochondriis pallidè cinereis.

The characters given by Mr. Ridgway for the separation of *T. fuscescens salicicola* from *T. fuscescens*, in the last edition of his 'Manual,' are as follows :—

T. fuscescens.

Above light tawny-brown.
Chest creamy-buff, with narrow markings of brown, scarcely darker than upper parts.
Length, 6·45–7·75 inches.
Wing, 3·75–4·15.
Tail, 2·70–3·30.
Culmen, 0·52–0·60.
Tarsus, 1·05–1·25.
Eggs, 0·85 × 0·67.
Hab. E. United States and British Provinces, breeding from about 40° north to Manitoba, Ontario, Anticosti, and Newfoundland.

T. fuscescens salicicola.

Above russet-olive.
Chest very pale buff, with broader markings of darker brown.
Length, 6·90–7·90 inches.
Wing, 3·80–4·25.
Tail, 2·95–3·40.
Culmen, 0·55–0·60.
Tarsus, 1·15–1·28.
Eggs, 0·85 × 0·66.
Hab. Rocky Mountains, east (casually ?) during migrations, to Minnesota, Illinois, &c.

In the British Museum are several specimens of *T. salicicola* from the Henshaw Collection, which have been identified by Mr. Ridgway himself, and I have therefore been able to form a judgment on the value of this race. As to the measurements of *T. fuscescens* and *T. salicicola*, it will be seen from the dimensions given by Mr. Ridgway that they overlap, although *T. salicicola* appears to be a slightly larger bird, as a rule.

Taking the Henshaw specimens as typical, I can only say that, when they are compared with a series of undoubted *T. fuscescens*, the variation in tone between the more rufous *T. fuscescens* and the more olive *T. salicicola* is so gradual that it seems impossible to draw any hard-and-fast line between them. The darker specimens likewise resemble *T. ustulatus* in winter plumage, if it should happen that a careless preparation of the skin has obliterated the distinctive orbital ring of the latter. I may mention that intermediate specimens, which it has puzzled me to determine as to whether they are *T. fuscescens* or *T. salicicola*, come from Michigan, Corpus Christi, Texas, and Camacusa in British Guiana. The Texan bird I refer to *T. salicicola*, and the others to *T. fuscescens*.

References to the likeness of certain specimens to *T. ustulatus* are also made by Mr. Chapman (Bull. Amer. Mus. iii. p. 154) and by Mr. Ridgway himself (Proc. U.S. Nat. Mus. iv. p. 375).

Turdus fuscescens is more eastern in its range than the Willow-Thrush, but on the confines of their breeding-range the two forms inhabit districts in close proximity, while it would appear that they also follow the same lines of migration, as they occur together in their winter-quarters.

Mr. F. M. Chapman, in his paper on the Birds of British Columbia, makes the following remarks on the plumage of *Turdus salicicola*:—"A specimen in fall-plumage from Ducks is darker than spring birds from Ashcroft, and is remarkably close to spring specimens of *Turdus ustulatus* from the coast. A young male in spotted plumage taken from the same locality, August 8, is very different from *Turdus fuscescens* of nearly the same age. The light centres to the feathers of the upper parts are buffy, not tawny, while the wings and tail are russet-olive, not tawny brown. The differences are thus similar to those shown by the adults of both forms, but are more pronounced."

Mr. Ridgway, in his original description of the Willow-Thrush (Proc. U.S. Nat. Mus. iv. p. 374), records a specimen from the Souris River, in Dakota, this being the bird identified by Prof. Elliott Coues as *Turdus swainsoni* (Bull. U.S. Geol. Surv. iv. no. 3, p. 550). (*Cf.* Thompson, Proc. U.S. Nat. Mus. xiii. p. 633.) Mr. Ridgway likewise refers a specimen from Fort Rice, Dakota, to *T. salicicola*, and the single specimen in the British Museum procured during the survey of the 49th parallel is undoubtedly of the same race. I observe, however, that Mr. Ridgway refers a Pembina skin obtained by Dr. Coues on the same Survey to the true *T. fuscescens*.

A specimen from Montana is in the United States Museum (Ridgway, *l. c.*), and Mr. Williams says that the bird arrives at Grant Falls about the 15th of May and nests in the mountains as high as 4200 feet. It is the commonest and most widely distributed of the Thrushes in Montana (Auk, vii. p. 292).

From Wyoming specimens have been examined by Mr. Ridgway from Laramie and Fort Bridger, the latter having been obtained at the end of May (Ridgway, *l. c.*).

Mr. F. M. Chapman, in his paper on the collections made by Mr. Clark P. Streator in British Columbia, writes as follows:—"Captain Bendire informs me that the previously most northern discovery of the nest of this species is at Sassin, near Spokane Falls, from which he has recently received a nest and four eggs, taken on the 7th of June, 1890, with the female, a capture which he permits me to record. Mr. Streator's observations further extend this bird's range, and show it to be a common summer resident at least as far north as Ducks and Ashcroft."

Several specimens from Fort Garland, in Colorado, are recorded by Mr. Ridgway (*l. c.*), and the Henshaw Collection contains examples from the same place and from Colorado Springs killed in May and June. It was also found breeding near Denver (Hensh. Zool. Wheeler's Exped. 1875, p. 148). Mr. Drew gives the vertical breeding-range in Colorado as extending from 5000 to 8000 feet (Auk, ii. p. 15). Mr. Ridgway also found this Thrush nesting in the valleys of the Bear, Provo, and Weber Rivers in Utah (Orn. 40th Parallel, p. 398).

From Arizona Mr. Scott records a specimen obtained by Mr. Herbert Brown near Tuczon in May (Auk, v. p. 169).

In other parts of the United States the Willow-Thrush appears to be a migrant. In Illinois it was first observed by Mr. H. K. Coale at Chicago (Bull. Nutt. Orn. Club, p. 239, 1883), and he obtained a second specimen in May at Ravenia, in Lake County (Auk, xi. p. 222). Mr. Gault has not only procured examples at Glen Illyn in May, but believes it to be a regular autumn migrant in the State (Auk, xii. p. 85). I am inclined to consider a specimen in the Henshaw Collection, from Lowville, New York, shot by Mr. A. J. Dayan on July 3rd, 1876, as belonging to *T. salicicola*, as well as a male bird procured by Mr. Henshaw himself at Cambridge, Mass., on the 12th of June. Mr. Loomis has obtained it in Chester Co., South Carolina, in October (Auk, vi. p. 194), and

Mr. Ragsdale in Cook Co., Texas (Auk, iii. p. 281). A specimen in the Salvin-Godman Collection from Corpus Christi, procured on the 3rd of May by Mr. F. B. Armstrong, I also consider to be *T. salicicola*.

I have already referred to a specimen from Camacusa, in British Guiana, in the Salvin-Godman Collection, as being apparently referable to *T. salicicola*; and, according to Dr. J. A. Allen, an undoubted example was procured at Chapada, in Matto Grosso, in March by Mrs. Herbert Smith (Bull. Amer. Mus. iii. p. 340).

The following note by Dr. Elliott Coues on *Turdus fuscescens* (Bull. U.S. Geol. Surv. iv. p. 550) must, I think, refer to the Willow-Thrush, although Mr. Ridgway has identified one of the Pembina specimens as the true *T. fuscescens*. Dr. Coues writes:—"In the vicinity of Pembina it was found breeding in abundance during the month of June, where its exquisite song enlivened the tangled recesses of the wooded river-bottom, in which the timid birds secreted themselves, and formed one of the most characteristic pieces of bird-melody to be heard in that ill-favoured locality. A nest was found on the 9th of June, containing four fresh eggs, uniform bluish-green in colour, and measuring about 0·86 inch by 0·66 inch in diameter. It was placed upon a small heap of decayed leaves which had been caught on the footstalks of a bush a few inches from the ground, and composed of weed-stems, grasses, and fibrous bark-strips, woven together and mixed with withered leaves. The walls were thick, giving a bulky, irregular, and rather slovenly appearance, and causing the cavity to appear comparatively small,—it was only about $2\frac{1}{2}$ inches in diameter by less than 2 inches in depth, though the whole nest was as large as a child's head."

Mr. R. S. Williams, in his notes on the birds of Montana (Auk, vii. p. 292, 1890), writes of the present species:—"The commonest and most widely distributed of the Thrushes in Montana, It finds favourite nesting-sites all along the valley-streams in thickets of willow, rose, box-elder, &c., that, as the summer advances, become almost impenetrable with a rank growth of weeds. From such localities its song is often heard on its first arrival, but later little else than its loud plaintive call-note greets the listener's ear, and one may spend many a fruitless moment in trying to obtain a fair glimpse of the wary little inhabitant of the secluded covert. From the lower valleys this species ranges up to the mountain foot-hills and cañons, but I have never seen it far from water, or more than a few yards above the earth, and never in heavy evergreen timber."

Seebohm did not consider *T. salicicola* to be distinct from *T. fuscescens*, and did not include it in the illustrations of the present Monograph. [R. B. S.]

TURDUS ALICIÆ, *Baird.*

GREY-CHEEKED THRUSH.

Turdus aliciæ, Baird, B. N. Amer. p. 217, pl. 81. fig. 2 (1858); Baird, Brewer, & Ridgw. Hist. N. Amer. B. i. p. 11 (1874); Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 12 (1879); Seebohm, Cat. B. Brit. Mus. v. p. 202 (1881); A. O. U. Check-list N. Amer. B. 2nd ed. p. 317 (1895); Ridgw. Man. N. Amer. B. 2nd ed. p. 574 (1896).
Turdus swainsonii, var. *aliciæ*, Coues, Key N. Amer. B. p. 73 (1872).
Turdus swainsoni (nec Cab.), Scl. & Salv. P. Z. S. 1873, p. 255; Cordeaux, Ibis, 1875, p. 177.
Turdus swainsoni, b. *aliciæ*, Coues, B. N.-West, p. 4 (1874); id. B. Colorado Vall. p. 35 (1878).
Hylocichla aliciæ, Ridgw. Proc. U.S. Nat. Mus. iv. p. 207 (1881).
Turdus ustulatus aliciæ, Coues, Check-list N. Amer. B. p. 24 (1882); Loomis, Auk, ii. p. 190 (1885).
Turdus swainsoni aliciæ, Coues, in Stearn's New England Bird Life, i. p. 59 (1881).
Turdus swainsoni, var. *aliciæ*, Palmén, Bidr. Vega-Exped. p. 262 (1887).

T. minor: annulo ophthalmico vix evidente: caudâ olivascenti-brunneâ: genis et facie laterali cineraceis: hypochondriis cineraceis.

The Grey-cheeked Thrush is an inhabitant of North America in summer from Labrador to Alaska, and extends to Eastern Siberia. The record of its occurrence in Kamtschatka requires confirmation, and rests apparently on a statement of Mr. Nelson's (Nat. Hist. Coll. Alaska, p. 216). On this Dr. Stejneger (Auk, i. p. 166) comments as follows:—"I am not aware of any record of this species having ever been found in Kamtschatka, neither do I believe that it has been, or ever will be, found there. Mr. Nelson's statement probably rests on a mistake. The fact is that the bird in question really has been found, and found breeding, rather numerously too, in that part of North-eastern Siberia where Nelson only supposes it to be found on account of its alleged occurrence in Kamtschatka. The Russian Astronomical Expedition to Cape Tschukotsk found *Turdus aliciæ* breeding in the neighbourhood of the station, and several specimens were brought to Irkutsk, and placed by the Geographical Society in the University Museum of that city, where they were seen by Dr. Dybowski. They were destroyed by the great fire at the Museum, but at least one specimen had previously been forwarded by that gentleman to the Museum of Warsaw. The identity of this specimen was determined by Prof. Dr. Cabanis of Berlin." Taczanowski writes:—"The expedition of M. Maydell found the species to the north of Yakoutsk and in the Tschouktschi Peninsula (Faune, Orn. Sibir. Orient. p. 318)." During the expedition of the 'Vega,' Nordenskjöld procured specimens in the last-named district up to 67° N. lat. (Palmén, Bidr. Fogelf. Vega-Exped. p. 262).

In Alaska, Mr. L. M. Turner states that the present species arrived at St. Michael's during the first week in June, and breeds in the vicinity, but was not common (Contr. Nat. Hist. Alaska, p. 183). Mr. E. W. Nelson writes:—"This species is common through all the northern portions of Alaska wherever willow and alder bushes afford it shelter. Its western range extends to

Bering Straits and beyond. Along the entire Yukon, and other streams bordered by trees or bushes in this region, it is present in great abundance during the breeding-season. It extends even beyond the tree-limit, wherever a bunch of dwarf willows will give it shelter, to the very shores of the Arctic and Bering Seas. On the 1st of June, 1879, as I came down the Yukon by boat, large numbers of their nests were seen in the leafless bushes along the river-banks. A number of these nests were close to the ground, within 2 or 3 feet, while others were from 8 to 12 feet high at the division of two stout branches, where the compact structure of fine grass and leaves was placed. The species reaches the mouth of the Yukon and adjacent coast in large numbers about the last of May or the first of June. The earliest arrival which I have recorded is on the 24th of May. They are soon found in every thicket, whence their low sweet song is frequently heard, but they are very shy and, at the first alarm, dive into the dense bushes for shelter. As soon as the breeding-season is over, they become less retiring and frequent the vicinity of villages and more open spots, where many are killed by the native boys, armed with their bows and arrows. Their skins are removed and hung in rows or bunches to dry in the smoky huts, and are preserved as trophies of the young hunters' prowess. In the winter festivals, when the older hunters bring out the trophies of their skill, the boys proudly display the skins of these Thrushes and hang them alongside.

"On the sea-coast every alder-patch has a pair or more of these birds, and the presence of the species at Sitka and Kodiak is attested by many specimens in the U.S. National Museum." (Nat. Hist. Coll. Alaska, p. 216.)

The Grey-cheeked Thrush is said to be very abundant on the Anderson and Coppermine Rivers by Mr. Macfarlane, not only where trees are to be had for nesting purposes, but also in situations where none exist. One nest was taken by him on Wilmot-Horton River (Proc. U.S. Nat. Mus. xiv. p. 445, 1891).

In the Slave Lake Region, Dr. Brewer states that *T. swainsoni*, and not *T. aliciæ*, is the predominant species. A specimen is in the British Museum from Repulse Bay, collected by Dr. Rae, and Mr. Eagle Clarke has recorded the species from Fort Churchill, Hudson's Bay (Auk, vii. p. 322). In Labrador, Professor Elliott Coues found it nesting commonly (Proc. Philad. Acad. 1861, p. 217), and Mr. L. M. Turner says that it is common in eastern and south-eastern Labrador, but is rare in Ungava. It breeds wherever it occurs in summer, and a nest and eggs were taken by him at Fort Chimo on the 28th of June, 1884 (Proc. U.S. Nat. Mus. viii. p. 235, 1885). Dr. Bishop has procured specimens on the Magdalen Islands in July, where he believes the species to have been breeding (Auk, vi. p. 149). Mr. Bolles observed it on Cape Breton Island in August, and Mr. F. H. Allen, who records this occurrence, believes that it may be a migrant there (Auk, xii. p. 90), if, indeed, it be not the race known as *T. bicknelli*. Mr. Palmer obtained full-grown young birds in Canada Bay, Newfoundland, in July (Proc. U.S. Nat. Mus. xiii. p. 265).

Allowing that the specimens from the last-named localities have been correctly identified by the American naturalists, and of this there can hardly be a doubt, it will be seen that the breeding of the so-called *Turdus bicknelli* on the islands off Nova Scotia brings the nesting-ranges of these two forms of Grey-cheeked Thrush in rather close proximity, and it is very doubtful if they are really separable from each other. According to Mr. Hagerup (B. Greenl. p. 61), *T. aliciæ* is "a chance visitor to South Greenland. Mr. Benzon possesses a specimen procured in August, 1862."

The present species is recorded as a migrant in spring and autumn in Ontario, according to McIlwraith (B. Ontario, p. 407), as it is also throughout the greater part of the United States, and it appears to remain in some localities for several weeks before finally departing for its northern

breeding-home. Mr. Thompson says that in Manitoba it is a common migrant across the Big Plain (Auk, iii. p. 328, and Proc. U.S. Nat. Mus. xiii. p. 633), and it has been noticed by Mr. Thorne at Fort Keogh in Montana in May, but it is rare in the vicinity and only one female specimen was procured (Auk, xii. p. 218). It will doubtless be observed on migration in some of the other States, but it would appear that its line of route is to the eastward of the Missouri, as it is recorded by Nehrling as passing through Northern Illinois late in September, and arriving in the last days of April (N. Amer. Birds, p. 14). Dr. Hatch says that in Minnesota it arrives about the 10th of May, and has so far been only met with on migration, though he has reason to think that it may turn out to be a summer resident in some localities (B. Minnesota, p. 438). In the Eastern United States *Turdus aliciæ* is spoken of only as a migrant passing through Tennessee, South Carolina, and Louisiana, to Florida and the Greater Antilles. In Florida Mr. Scott records it as a migrant in the Caloosahatchie Region (Auk, ix. p. 214), and he met with it at Tarpon Springs in April (Auk, vii. p. 119), but he states that it has not been recorded from Punta Rassa or from Key West. Specimens from Corpus Christi in Texas are in the Salvin-Godman Collection; they were procured by Mr. F. B. Armstrong in April and October. Near San Antonio Mr. Attwater found the present species a common migrant (Auk, ix. p. 344).

Mr. Cory, in his 'List of the Birds of the West-Indian Islands,' records the Grey-cheeked Thrush from Cuba and St. Domingo, and its line of migration passes along the islands of the Bay of Honduras, as Dr. Gaumer has procured specimens in Cozumel and Ruatan (Salvin, Ibis, 1888, p. 243). No specimen has yet been recorded from any part of Mexico, but there is a single example in the Sclater Collection in the British Museum, said to have been obtained in Guatemala by Skinner, and Lawrence has recorded another as having been obtained by Von Frantzius in Costa Rica (Ann. Lyc. N. Y. ix. p. 91). Arcé procured a specimen of this species on the Volcano of Chiriqui in Panama (Salvin, P. Z. S. 1870, p. 180), and it extends to Colombia, as there is an example from Bogotá in the Seebohm Collection. Count Von Berlepsch has presented a Venezuelan specimen to the British Museum, and Whitely obtained *Turdus aliciæ* in British Guiana at Bartica Grove in February, at Camacusa in March, and on the Carimang River in December (Salvin, Ibis, 1885, p. 197). That it goes to Amazonia in winter is also shown by a specimen procured by Mr. Edward Bartlett at Chamicuros on the 20th of March, 1868 (Scl. & Salv. P. Z. S. 1873, p. 255, s. n. *T. swainsoni*).

Dr. Brewer, in the 'History of North American Birds,' gives the following note on the habits of the species:—"*Turdus aliciæ* comes a few days the earlier, and is often in full song when *T. swainsoni* is silent. The song of the former is not only different from that of the latter, but also from that of all our other Wood-Thrushes. It most resembles the song of *T. pallasi*, but differs in being its exact inverse, for whereas the latter begins with its lowest notes and proceeds on an ascending scale, the former begins with its highest and concludes with its lowest note. The song of *T. swainsoni*, on the other hand, exhibits much less variation in the scale, all the notes being of the same altitude. I am also informed that while the *T. swainsoni* is far from being a timid species, but may be easily approached, and while it seems almost invariably to prefer the edges of the pine-woods, and is rarely observed in open grounds or among the bare deciduous trees, the habits of *T. aliciæ* are the exact reverse in these respects. It is not to be found in similar situations, but almost always frequents copses of hard wood, searching for its food among their fallen leaves. It is extremely timid and difficult to approach. As it stands or as it moves upon the ground, it has a peculiar erectness of bearing which at once indicates its true specific character so unmistakably that any one once familiar with its appearance can never mistake it for *T. swainsoni* nor for any other bird."

Mr. Nehrling writes:—"During migration in autumn and spring the Grey-cheeked Thrush is a common bird in our woodlands. In northern Illinois it makes its appearance late in September and passes southward without long delay. In spring it usually arrives during the last days of April and then often lingers several weeks. At this time you may hear its really beautiful, delicious song. It is unlike the song of all the smaller Thrushes, but is nearest to that of the Hermit. It differs, however, in being exactly inverse, for whereas the Hermit begins with its lowest notes and proceeds on an ascending scale, Alice's Thrush begins with its highest and concludes with its lowest note."

Mr. E. W. Nelson, in his work on the Natural History of Alaska, observes:—"Dall records a nest obtained from an elevation of about 6 feet in a small alder. This nest was made of hair, lined with scraps of deer-hair, feathers, and moss. A nest obtained by me near St. Michael's, on the 1st of June, is an extremely small, loose structure, formed by lining a small depression at the base of a shrub in the midst of an alder-thicket with fine soft grass leaves. The material of the nest is uniform throughout, and in this particular partly bears out Dr. Brewer's statement in the 'History of North American Birds,' which is: 'The nests [of *T. aliciæ*] are also quite different in their appearance and style of structure. The *Hypnum* mosses are wholly wanting in those of *T. aliciæ*.' This statement is not confirmed, however, by the examination of other nests. A second example, obtained at St. Michael's on June 20, was composed mainly of these mosses mixed with a small amount of coarse grass. This nest was placed upon the branching base of a small alder only a few inches from the ground. The first-mentioned measured $3\frac{1}{2}$ inches across the top by 2 inches deep, and the eggs which it contained measure respectively, ·93 by ·62, ·90 by ·64, and ·93 by ·68. These eggs are blue, with a varying amount of reddish-brown speckling, which is most abundant at the larger end. In two specimens of this set the spots are thinly scattered over the shell, while in the other two the speckling is so distributed that over half the surface is concealed by it. Of the specimens in the National Museum Collection some are scarcely marked at all, while in others the ground-colour is nearly hidden. The single egg found in the second nest measures ·92 by ·69. This nest measures 3 inches in depth by 4 inches in width, the central cavity being 2 inches deep.

"It may be remarked here that the nest just described is typical of the structure made by *T. swainsoni*, according to Dr. Brewer, but, as every field-ornithologist is aware, any attempt at an exact science of zoology and the study of the nests of birds must fail. Observation shows that in building their nests birds are necessarily influenced by the surroundings and by the nature of the material near their nesting-sites. The so-called instinct which has been supposed to lead birds of one species to almost invariably select a certain kind of material and a certain position for their nests has little foundation in fact. The nesting-range of the Grey-cheeked Thrush extends throughout Alaska, as specimens have been obtained in all parts of the Territory, during the breeding-season, except, however, the islands of Bering Sea and the Aleutian Chain."

The nesting of *T. aliciæ* is thus described by Dr. Brewer:—"The nests measure about 4 inches in diameter and $2\frac{3}{4}$ in height. The cavity is 2 inches deep, and its diameter $2\frac{1}{2}$ inches. They are usually compact for the nest of a Thrush, and are composed chiefly of an elaborate interweaving of fine sedges, leaves, stems of the more delicate *Equisetaceæ*, dry grasses, strips of fine bark, and decayed leaves, the whole intermingled with the paniculated inflorescence of grasses. There is little or no lining other than these materials. These nests were all found, with but few exceptions, on the branches of low trees, from two to seven feet from the ground. In a few exceptional cases the nests were built on the ground.

"Occasionally nests of this species are found constructed with the base and sides of solid

mud, as with the Common Robin (*Turdus migratorius*). In these, as also in some other cases, their nests are usually found on or near the ground. So far as I am aware, neither its occasional position on the ground nor its mud-frames are peculiarities ever noticeable in nests of *T. swainsoni*.

"The eggs were usually four in number. Their colour is either a deep green tint, or green slightly tinged with blue; and they are marked with spots of russet- and yellowish-brown, varying both in size and frequency. Their mean length is ·92 of an inch, and their mean breadth ·64. The maximum length is ·94 and the minimum ·88 of an inch. There is apparently a constant variation from the eggs of the *T. swainsoni*; those of *T. aliciæ* having a more distinctly blue ground-colour. The nests are also quite different in their appearance and style of structure. The *Hypnum* mosses, so marked a feature in the nests of *T. swainsoni*, as also in those of *T. ustulatus*, are wholly wanting in those of *T. aliciæ*."

This species, in its fully adult plumage, is easily recognized by the following characters:—The sides of the body are grey, with a faint tinge of olive, but the grey is the predominating colour, though it is darker than in *T. fulvescens* and *T. salicicola*. The colour of the upper parts is also dark olive-brown, and the sides of the face are likewise dusky grey, as also the cheeks. The axillaries resemble the sides of the body in colour, and the mirror at the base of the quills is white and not very conspicuous. The throat is almost white, with very little tint of buff, and the triangular black spots are very strongly pronounced: "upper mandible black, the lower one dark anteriorly, lighter at the base, drying very pale; feet dark, with paler soles; gape yellow" (*L. M. Turner*).

Mr. Nelson has given the accompanying note on the plumages of the species:—"Fall specimens possess much more of the warm, buffy tint on the breast than spring birds, although many of the latter have more or less, and in some specimens obtained by me from the Yukon the buff is nearly as intense and widely-spread as upon typical examples of *T. swainsoni*. The full-grown young of this species, obtained on the Lower Yukon, in August 1877, has the dorsal surface of a dull brownish-olive, nearly uniform, but with a lighter shade and a decided brownish wash on the outer edges of the wing-feathers and on the tail, especially near the tip. The feathers on the side of the head, embracing the eyes and extending back to the nape, including the scapulars and intermediate feathers of the back, are each marked with a well-defined oval, lanceolate, or sagittate central area, of a dingy shade, which in some places becomes pale buffy-yellowish. The feathers on the throat, neck, and breast are pale buffy-white, with black tips. These tips are larger and more intense on the breast. They are centrally located and somewhat oval or arrow-shaped on the throat, but on the breast they become a squarely-cut black edging to the feathers, which limits the white by a nearly straight line. These tips pass to faint edgings of black on the white of the middle of abdomen, and shade gradually into a brownish-olive on the sides and flanks. The feathers on the sides and rump are dingy yellowish-brown, indistinctly barred with blackish. The middle of the crown and rump are immaculate. The second specimen obtained at St. Michael's, August 25, is in a little more advanced stage than the one just described, and has the pale buff shade across the breast and sides of the neck of the second plumage. The lores are greyish-white, and the spots on the breast are nearly as in the adult. The bill is dull horn-colour, lighter at the base of the lower mandible. Both of the specimens just described are merging into the second or adult plumage, but the first is but very little changed, and has lost only the spots on the crown and rump and the white tips on the wing-coverts. The second specimen, though a little older, still retains the faint wing-bars formed by the light tips to the coverts."

The figure in the Plate is taken from a Philadelphian specimen in the Seebohm Collection.

[R. B. S.]

TURDUS BICKNELLI (*Ridgway*).

BICKNELL'S GREY-CHEEKED THRUSH.

Hylocichla aliciæ (nec Baird), Merriam, Bull. Nutt. Orn. Club, vi. p. 226 (1881).
Hylocichla aliciæ bicknelli, Ridgway, Proc. U.S. Nat. Mus. iv. p. 377 (1882).
Turdus aliciæ bicknelli, Brewster, Bull. Nutt. Orn. Club, viii. p. 12 (1883); Coues, Key N. Amer. B. 2nd ed. p. 248 (1884); A. O. U. Check-list N. Amer. B. 2nd ed. p. 317 (1895); Ridgw. Man. N. Amer. B. 2nd ed. p. 575 (1896).

T. similis *T. aliciæ,* sed minor et rostro graciliore distinguendus.

This race of the Grey-cheeked Thrush, which Seebohm, as is shown by the label on the specimen in his collection, was not inclined to separate from *T. aliciæ*, constitutes a small eastern race of the last-named species, and is, in my opinion also, scarcely worth separating from it. I keep it distinct in deference to the opinion of my American colleagues, who allow it to stand in the last edition of the 'Check-list' as a race of *T. aliciæ*. The characters given by Mr. Ridgway in the latest edition of his 'Manual' (p. 575) cannot be said to amount to much, and it would seem to me more probable that *T. bicknelli* is nothing but a small race of *T. aliciæ*.

The differences given by Mr. Ridgway for the separation of the two races are simply those of size, and it will be seen that, even from his own figures, they overlap, the dimensions of *T. aliciæ* being stated to be as follows:—Length 7–7·75 inches, wing 3·75–4·4, tail 2·9–3·4, culmen 0·45–0·58, tarsus 1·12–1·30; whereas in *T. bicknelli* the length is 6·25–7·25, wing 3·4–3·8, tail 2·6–2·7, culmen 0·50–0·52, tarsus 1·1–1·25.

The distribution of Bicknell's Thrush, so far as is known at present, is given by Mr. Ridgway as follows:—"In summer, higher mountains of north-eastern United States (Catskills, White Mountains, &c.) and Nova Scotia; Illinois (autumn); winter-quarters unknown."

T. bicknelli was described by Mr. Ridgway from the Slide Mountains in Ulster Co., New York (Proc. U.S. Nat. Mus. iv. p. 377), where, Mr. Bicknell states, it is found up to 4200 feet (Bull. Nutt. Orn. Club, vii. p. 152), and it breeds on the Catskill Mountains (Ridgway, Bull. Nutt. Orn. Club, vii. p. 257). In the Seebohm Collection is a specimen procured by Dr. C. Hart Merriam at Locust Grove, New York, on the 24th of May, 1878 (*cf.* Merriam, Auk, i. p. 58). Mr. Dutcher has met with it on Long Island, on the 1st of October, on migration (Auk, iii. p. 448).

In Massachusetts, Mr. Brewster found Bicknell's Thrush on Mount Washington at from 3000–3800 feet, in July (Bull. Nutt. Orn. Club, viii. p. 12, 1883), and Mr. Faxon records it as a summer resident in Berkshire Co., Mass. (Auk, xii. p. 392). Specimens from Grantville (May) and the Wellesley Hills (October) are in the Henshaw Collection. In New Hampshire, Dr. Chadbourne has recorded the breeding of Bicknell's Thrush on the White Mountains at an elevation of from 3000 to 4340 feet (Auk, iv. p. 107), and Messrs. Faxon and Allen state that it was common on Mount Lafayette, in the same district, from June to August (Auk, v. p. 153). It also breeds in Vermont, according to Mr. Torrey (Auk, vi. p. 194). Off Nova Scotia, on Mud and Seal Islands, Mr. Langille found it nesting (Auk, i. p. 268).

Little is known of the winter range of this supposed race of *T. aliciæ*. Specimens determined by Mr. Ridgway and Mr. Henshaw as *T. aliciæ bicknelli* are in the Henshaw Collection from Washington, D.C. (May 17, 1884), and from Chicago (*E. W. Nelson*). Mr. Loomis records it from Chester Co., N. Carolina, on May 6th, on the northward migration, and again on the voyage south, on the 17th of September; and the winter route of the small race of the Grey-cheeked Thrush is marked by him through South Carolina by its occurrence there on the 17th of September, and again on the spring migration on May 6th (Auk, iv. p. 261). The only time that the bird has been recorded from further south is by Mr. Cory (Auk, viii. p. 173), who has received specimens from Cay Sal in the Bahamas, procured by Mr. Cyrus S. Winch in May 1891.

That *T. aliciæ* and *T. bicknelli* nest in nearly the same latitudes is admitted in the above notes from Nova Scotia, and it seems more than probable that in the mountains of New England the latter bird finds the same conditions of climate during the breeding-season that other individuals obtain further to the north, and I have grave doubts as to *T. bicknelli* being really separable from *T. aliciæ*.

Mr. Bicknell has described the finding of this small Thrush in the following interesting account:—

"That there remained unrecognized at this late day a bird regularly inhabiting one of the most populous portions of our country; or, indeed, that a species of eminently boreal habitat during its breeding-season, and not known to occur at all at such time within the limits of the United States, should have a representative race regularly breeding in our midst, are facts for which we were little prepared . . . . . On June 15, 1881, nearing the summit (the highest peak of the Catskills, 4205 feet altitude) of Slide Mountain in Ulster County (N.Y.), the forests of a more northern latitude were forcibly suggested. A shower had fallen during the ascent, and the sun was still obscured, while a sharp wind from the north-west piercing the wet woods and sighing among the balsams, blasted the weather-beaten, heightened an impression of remoteness and desolation. The evergreens, constituting the principal arboreal growth, extended off on all sides, clothing the rocky and moss-grown slopes, and presenting the striking contrast of a young and fragrant second growth clustering about the branchless and spiny trunks of their sires tottering in decay; or, with tangled and matted branches outlined here and there, as we approached the summit, against a grey and cheerless sky. Owing to the comparatively short life of these trees, that high portion of the mountain where their tribe had pitched was brought into grim contrast with its surroundings. Old age and death, continually present invading their ranks, had everywhere left their traces; flourishing clusters had been stricken, their fellowship, groups and gatherings had been divided and scattered, and like a contagion the destroyer had spread among their hosts. But the younger generations are continually forming their associations, and with green and fragrant grouping filling in deserted chambers and screening the devastation that has gone before, although only to furnish material for its continuance. All this with an occasional undergrowth of greater or less luxuriance, gave a diversified and somewhat open character to the surroundings, entirely dissimilar to that of the environing forest; conditions which, in conjunction with humidity and elevation, have brought this mountain top into some relation with the swampland of a more northern region. Reaching a more elevated portion of the ridge where the ground was more level and the surface less rocky, that north-woods tree, the paper birch (*Betula papyracea*) occasionally appeared, and more abundantly the mountain ash. Almost the only remnant of the dense mountain forests below was the yellow birch (*Betula lutea*), which, joining the undergrowth, persisted with small and stunted stature to the summit. On all sides were to be seen the white blossoms of *Viburnum lantanoides*, which, though also found in the valley woodlands, had there long since flowered and was now bearing green fruit. Another characteristic shrub was *Amelanchier canadensis oligocarpa*; lower down had been found the

var. *botriapium*, but here the northern form was well marked, seeming almost specifically distinct. In the deep, damp moss, covering and filling in the rocks beneath the balsam growth, and relieving the ruggedness of the slopes, northern plants were growing in greater or less profusion. The dwarf cornel (*Cornus canadensis*) grew in such close luxuriance in congenial spots, that its snowy bracts imparted an almost uniform whiteness to the whole beds. With, or near it, blossomed the wood sorrel (*Oxalis acetosella*) with delicately violet-veined petals, and the appropriately named gold-thread (*Coptis trifolia*), of evanescent bloom but shining evergreen leaves, and the little star flower (*Trientalis americana*) were often also associates. Excepting the pale yellow bells of *Clintonia borealis*, and the purplish tinge, or veining, of the blossoms of several other species, all the plants noticed in bloom at this time upon the mountains bore flowers of the same shade of white. The more open ground about our course along the ridge supported a luxuriant and graceful growth of that lovely fern *Aspidium spinulosum*, and with it, in openings about the summit, grew abundantly the mountain golden-rod (*Solidago thyrsoidea*), which, although yet many weeks from bloom, heralded a royal emblem to light the mountain's brow ere the white locks of winter should again possess it.

"At an elevation where these plants first appeared the trees nowhere attained more than a medium stature, those which seemed best to have surmounted the difficulties of their situation, the balsam and the paper birch, never rising to a height of more than, perhaps, twenty-five feet. This growth completely encompassed the range of vision, but an occasional scantiness in the foliage permitted glimpses of surrounding mountains rolling off like huge green billows into the blue distance.

"From these evergreens came the leisurely call of the Canada Nuthatch (*Sitta canadensis*), and on closer approach the low plaintive notes of the little Yellow-bellied Flycatcher (*Empidonax flaviventris*). The brief warble of the Black-and-Yellow Warbler (*Dendroica maculosa*) told the presence of its unseen author in the surrounding trees, while among the undergrowth the less frequent, but louder and more sustained song of the Mourning Ground-Warbler (*Geothlypis philadelphia*) showed that this species, which had been left at the foot of the mountain, had here reappeared. At intervals, faint mingling with these songs, from some hidden fastness below, came the fastasia of the Winter Wren, a melody that seemed to pass from the spirit of unclaimed nature, voicing some mystery of the mountains. The clamour of a party of Blue Jays occasionally arose and died away in the forest, but here, in the mountain solitude, their screams seemed less subdued than in less primitive regions, and lacked that suggestion of consciousness which individuals constantly within human hearing seem to acquire. Busily roaming Chickadees (*Parus atricapillus*) at times came about our path, and the Snow-bird (*Junco hyemalis*) was present with its simple song. Olive-backed Thrushes (*Turdus ustulatus swainsoni*) too were constantly to be heard, and finally, guided by its near song, one was followed up and secured. A moment later another Thrush darted across the path, and disappearing through a young balsam growth, immediately began to sing a few rods off. The song was different from that of the bird which had just been shot, so much so, in fact, as to be remarked even by my guide. It seemed to be more uniform in character, with less variation and definition of the notes: as I wrote in my note-book at the time—more suggestive of the song of the Veery. A conspicuous point of difference was that it was more subdued in tone, in fact of a somewhat ventriloquial nature. On examining the bird in hand, although I had thought myself familiar with all our eastern Wood Thrushes (*Hylocichlæ*), I must confess to having been puzzled. It was obviously neither the Olive-backed nor the Hermit Thrush, the only species of our own smaller Thrushes, which from the distribution of their group (as then understood) could possibly be expected to occur. I at once noted its general resemblance to the Grey-cheeked Thrush, but it seemed impossible that this Hudsonian bird could be found so far south at this season; and though

a second specimen pointed more strongly toward it, it was not until I had reached home, and made actual comparisons, that I could feel satisfied that its true relationship was with that species. These examples from the Catskills were submitted to Mr. Ridgway, the result being the recognition of a new bird, belonging to our eastern fauna.

"But to return to the mountain. It would hardly be justifiable to make a positive statement about a difficult song that had been but once identified, but I feel positive that the Thrushes which were last heard that evening about our camp on the extreme summit of the mountain were the new form. Night was rapidly falling, and the valleys were in darkness, when one sang several times near the camp, and for some time afterwards a single call-note was occasionally heard, and the varying distance of the sound showed that the birds were still active. Excepting these sounds, the last bird-notes heard were those of the Yellow-bellied Flycatcher.

"The sharp north-west wind continued late, and the night became clear and cold. Shortly after midnight the bright moon showed the temperature, by a thermometer which I had hung beside the camp, to be 35°, and at sunrise it stood at 32°. Before daylight I was standing on a boulder of conglomerate on the dim mountain's brow listening for the awakening of the birds. The first songs heard were those of the Hermit-Thrush, Snow-bird, and Yellow-bellied Flycatcher, which began almost simultaneously, followed a little later by those of the Olive-backed Thrush and the Mourning Warbler, but *T. aliciæ bicknelli* was not heard or at least not near enough to be distinguished among the other species.

"The increasing light upon the mountain seemed to attract the birds from below, whither, perhaps, they had retired for the night, and soon many different notes were to be heard about the camp; not, however, in that boisterous chorus with which the day is often announced about our homes, in which the notes of many individuals of many species are blended in such confused medley that separate voices are almost indistinguishable, but simply the association of a few vocalists, the very isolation of whose position endowed their voices with an additional interest and charm.

"After those already mentioned, the Black-poll Warbler (*Dendroica striata*) began its unpretending notes, which almost to me suggest a short dotted line, and this song, with that of the Black-and-Yellow Warbler, occasionally alternated about us in agreeable contrast. Now and then a Canada Nuthatch, on its morning tour, tarried to inspect some dead trunk or thinly clothed tree, upon the projecting apex of which, or that of some companion, a solitary Purple Finch occasionally alighted, and with a few wild fugitive notes was gone, to other mountain tops or the forests of the descending slopes."

The following account of the nesting of Bicknell's Thrush by the Rev. J. H. Langille has been published in the 'Auk' (vol. i. pp. 268–270):—

"Off the south-west end of Nova Scotia, opposite Yarmouth and Shelburn Counties, is a large number of islands—one for every day in the year, they say. On leaving the harbour of the city of Yarmouth, off to the westward and well out at sea, are Green Island and Garneet Rock. Then come the Tusket Islands, many in number, and of varied size, form and appearance; some being partly cultivated, some wholly wooded, and the outermost almost as smooth as a lawn; these last are called the Bald Tuskets. Farthest out at sea and very nearly on an extended line between the two counties mentioned are the Mud Islands and the Seal Islands. These are almost entirely covered with a low growth of evergreens—black spruce and balsam fir. Except the Robin, the Song-Sparrow, and Snow-bird, and a few Redstarts and Winter Wrens, almost the only small land birds breeding here are the Black-poll Warbler and Bicknell's Thrush—the last two being very abundant.

"This Thrush was wholly new to me. My attention was first arrested by its call or alarm note, which sounded like 'cree-e-e-e-eep, or quee-a, or cree-e-e-ee,' in a rather fine high key. It had some resemblance to the call of Wilson's Thrush, but was unmistakably different; and, as Mr. Brewster

has noted (Bull. N. O. Club, vol. viii. p. 12), is very particularly different from the sharp liquid 'pip' or 'peeuk' of the typical Olive-back. The song, 'tsiderea, tsiderea, tsiderea,' sometimes 'tsiderea, rea, tsiderea,' or some other modulation of the same theme, is similar in tone to that of Wilson's Thrush, but more slender and wiry, and therefore not nearly so musical and grand. In the solitude of its evergreen islands, however, this bird is by no means an inferior songster, the sibilant tones of its voice being finely relieved by certain more prolonged and liquid vibrations. A careful examination satisfied me that the bird was Bicknell's Thrush, lately identified in the Catskills and in the White Mountains, and named in honour of its discoverer. It was so abundant, and not particularly shy for a Thrush, that I had the most ample opportunity for the study of its habits; and several specimens were secured and retained. Next to its lesser size, its structural peculiarity is its slender, depressed, and finely curved bill, compared with which that of the typical Olive-back seems thick and clumsy. While singing, which occurred throughout the day, but more especially in the evening twilight and early morning, the bird delighted to perch in the top of the evergreens, often on the very tip, where its bright, brown figure, with elevated head, was quite conspicuous. On the ground and in taking its food, its habits were precisely like those of other Thrushes.

"To find the nest of this species was my great desideratum; and though the bird was so numerous it was by no means an easy task. Many an hour did I thread my way through almost impenetrable evergreen thickets before I could secure the much coveted prize. At last my search was rewarded by nests in considerable numbers, and all as nearly alike in location, structure, and materials as it is possible for nests to be.

"Placed a few feet from the ground, and against the trunk of an evergreen tree, it was composed externally of various kinds of mosses, including a few fine sticks, weed-stems and rootlets, and was lined with fine grasses well bleached; so that, outside, the nest was as green as a bunch of fresh moss, and the inside was light brown. The eggs, ·87×·63 of an inch, are light bluish-green, speckled with brown.

"About the Mud and Seal Islands dense fogs prevail almost continually throughout the summer. This excessive moisture, so productive of mosses, causes the moss in the walls of the Thrushes' nests to grow; hence the nests of previous years, well protected from the weather by dense evergreens, become elegant moss-baskets finely ornamented within and without with living cryptogams. I saw a number such, which looked as if they had grown *in situ* on the tree."

In Mr. Bicknell's paper on the "Singing of Birds" (Auk, i. p. 130, 1884), the accompanying notes must refer to the present bird:—

"It is occasionally in song with us through the first week in June,—that is, I have heard it up to June 4. I am well satisfied that the songs of the Grey-cheeked and Olive-backed Thrushes are not alike; in fact that they are as distinct from one another as from the songs of the other small Thrushes.

"During recent seasons particular attention was paid to the songs of these birds, and a clear difference between the songs of individuals of each proved to be constant, so far as limited observation went. As a result of my experience with these birds, I have little hesitation in characterizing the song of the Grey-cheeked Thrush as weaker than that of the Olive-backed, entirely dissimilar in tone, and with a somewhat different disposition of notes. Instead of musically outbursting, it is singularly subdued, and has a far-away and rather ventriloquial sound. It seems more the expression of some distinct emotion revived in memory than of a suddenly felt present emotion which the song of the Olive-backed Thrush suggests." [R. B. S.]

TURDUS USTULATUS, *Nutt.*

RUSSET-BACKED THRUSH.

Turdus ustulatus, Nutt. Man. (2nd ed.) i. p. vi (1840); Salvin & Godman, Biol. Centr-Amer., Aves, i. p. 10 (1879); Seebohm, Cat. B. Brit. Mus. v. p. 203 (1881).

Turdus swainsonii, var. *ustulatus*, Coues, Key N. Amer. B. p. 73 (1872); Baird, Brewer, & Ridgw. Hist. North Amer. B. i. p. 16 (1874).

Turdus swainsoni, c. *ustulatus*, Coues, B. North-West, p. 4 (1874); id. B. Color. Vall. p. 35 (1878).

Hylocichla ustulata, Ridgway, Proc. U.S. Nat. Mus. iii. p. 166 (1880), iv. p. 207 (1881), p. 375 (1882).

Turdus swainsoni (nec Cab,), Salvin & Godman, Ibis, 1880, p. 115.

T. minor: annulo ophthalmico pallido valdè indicato; suprà rufescenti-brunneus: plagâ albidâ ad basin internam primariorum latâ et valdè conspicuâ.

This is a western species, with a more restricted range than its near ally, *T. swainsoni*. Mr. Ridgway gives its range as the Pacific coast of North America, north to Sitka. It has not been found in any part of Alaska, where its ally, *T. swainsoni*, takes its place; but it is very common in British Columbia in the coast-region, and breeds, according to Mr. F. M. Chapman (Bull. Amer. Mus. N. H. p. 154). Specimens from Fort Rupert in Vancouver Island and from Hidalgo Bay collected by Dr. Lyall are in the British Museum.

It is a summer resident in Washington Territory according to Mr. Lawrence (Auk, ix. p. 47), and also in Oregon according to Mr. Anthony (Auk, iii. p. 172). Dr. Merrill noticed it breeding near Fort Klamath (Auk, v. p. 365). On the Columbia River Dr. Cooper states that it arrives about the 1st of May and leaves in September, nesting from June 15th to July 13th (Proc. U.S. Nat. Mus. ii. p. 245). The last-named naturalist (*l. c.*) records the species from many districts in California. He found it nesting at Santa Cruz (lat. 37°) in May, and at Heywood (lat. 37° 40') in May and June. He believes that only one brood is reared in California. Mr. Brewster has recorded the occurrence of *T. ustulatus* in the Santa Rita Mountains in Arizona on the 17th of May (Bull. Nutt. Orn. Club, vii. p. 68).

The lines of migration of the species are marked by specimens in the Salvin-Godman Collection from the following localities:—Ysleta, Sonora, May 16, 1888 (*W. Lloyd*); Beltran, Jalisco, April 29, 1889 (*W. Lloyd*); Rio Papagaio, Guerrero, Oct. 1888 (*Mrs. H. H. Smith*); Puebla, Oct. 2, 1888 (*W. B. Richardson*); Misantla, Vera Cruz, Dec. 1889 (*M. Trujillo*); Eureka, Volcan de Tacana, Chiapas, 5000 feet, Feb. 20 (*W. B. Richardson*); Tuxtla, Chiapas, March 10–19 (*W. B. Richardson*); Union Juarez, Chiapas, 4000 feet, March 29 (*W. B. Richardson*); Huehuetan, Chiapas, April 9 (*W. B. Richardson*). Grayson met with it in the Tres Marias Islands, where it was abundant in the woods in January (Proc. Bost. Soc. N. H. xiv. p. 276); but Messrs. Salvin and Godman think that the specimens recorded by Dr. Sclater from Orizaba (*Botteri*) and by Mr. Lawrence from Tehuantepec (*Sumichrast*) were in all probability *T. ustulatus* and not *T. swainsoni* (Biol. Centr.-Amer., Aves, i. p 12). They observe:—"In Guatemala we found it very common at Coban in Vera Paz during the

winter months, where it frequented the second-growth woods so prevalent in that district. On the Pacific side of Guatemala we did not meet with it until the winter of 1873–74. It was then found to be not uncommon on the slopes of the mountains between Capetillo and San Diego, a heavily-wooded tract of country with patches of second-growth woods." In the Salvin-Godman Collection are specimens collected at Toliman in Guatemala, at 5000 feet, on the 24th of December, by Mr. W. B. Richardson, and there is also a skin obtained by the same collector at Leon in Nicaragua on the 15th of December, 1892.

Further south the species extends to Colombia, a Bogotá skin being in the Seebohm Collection, and I also refer to *T. ustulatus* the specimen procured by Mr. F. A. Simons at Minca, near Santa Marta, at 2000 feet, in January; it is now in the Salvin-Godman Collection (Salvin and Godman, Ibis, 1880, p. 115, s. n. *T. swainsoni*). Whitely met with it on Roraima in British Guiana on the 5th of December, 1881 (Salvin, Ibis, 1885, p. 197).

In his account of the birds collected during the survey of the 40th Parallel, Mr. Ridgway (p. 395) gives the following interesting note on the habits of the species:—"The Russet-backed or Oregon Thrush was first met with in the pine-region of the Sierra Nevada, on the western slope of that range at an altitude of about 4000 or 5000 feet above the Sacramento Valley. It inhabited there the deep ravines, where the undergrowth was extremely dense and overtopped by a thick growth of gigantic *Coniferæ*, extending in a vast unbroken forest for hundreds of miles over the mountains to the north and south. Eastward of that range it was met with but once, a single individual having been obtained on the second of June, in the Truckee Valley, not far from the eastern base of the Sierra Nevada, the individual in question being no doubt a last lingering one, since no others were observed after that date, all having departed for the mountains to the westward. The species is known to migrate in winter southward along the Pacific slope as far as Costa Rica, but its summer home is chiefly among the forest-clad mountains and wooded valleys from California to British Columbia and Sitka.

"The song of this Thrush much resembles that of *T. swainsoni*, but is different in many important respects, conspicuous amongst which is its finer quality. Its modulation is quite correctly expressed by Mr. Nuttall, who describes it as resembling the syllables '*wit-wit, t'villia, t'villia*'; but to convey to the reader even the slightest idea of its tone and effect would be the vainest endeavour. We heard the enchanting songs of these birds under circumstances calculated to make a lasting impression. It was in the midst of the dense and lofty forests of the Sierra Nevada, about halfway up the western slope, that we rested for the sabbath from our journey across the mountains. Hemmed in and overshadowed by giant forest-trees, we halted, with rippling and sparkling brooks from the snow-fields far above dashing through the ferns and varied herbage, the roadside bedecked with the gay and lovely flowers so characteristic of Californian glades, while below yawned the depths of a dark ravine, through which dashed and roared a mountain torrent. In the tall pines overhead skulked the noisy Jays and Nutcrackers (*Cyanura frontalis* and *Picicorvus columbianus*), mingling their discordant notes with the twittering of the Woodpeckers, who sported about the branches of the dead trees. But certain outbursts of rarest melody, heard at intervals from the darkest recesses of the deep ravine, drew the attention of every one in camp; notes of exceeding simplicity, yet full of tenderest expression and thrilling effect, far finer than the softest and sweetest notes of the flute. These harmonious carols would be taken up first by one, then by another musician, then answered from a distant portion of the dell. It was long before the author of these wild melodies could be seen, but patient search revealed a little brown bird, afterward determined to be this species, shyly flitting into the gloomy maze of foliage at our approach."

On its arrival in its summer-quarters the Russet-backed Thrush is described by all observers as being very undemonstrative and retiring in its habits. Mr. Anthony, writing of the species in Oregon,

says:—"During the first week after its arrival it is very shy and silent, keeping in the darkest and deepest thickets, uttering a single *chuck* of alarm when disturbed. As their numbers increase, a few are heard singing at dusk and in the early morning. By the time they have all arrived, the woods fairly ring with their clear metallic song. They nest in dark secluded thickets." Dr. Merrill writes that at Fort Klamath in Oregon the species "arrived about the 20th of May, a few nesting near the Fort and in suitable situations in the mountains. Its loud sweet song was heard at sunrise and sunset, but the birds were shy and difficult to shoot. A nest found on the 8th of June, containing four fresh eggs, was in a dense willow-thicket, and placed on a horizontal branch about two feet from the ground."

The Russet-backed Thrush, as this species is called by American ornithologists, is not remarkable for a russet back, and an attempt to distinguish specimens by this character alone would lead to failure, for many birds killed in autumn are quite olive on the upper surface, though they retain a slight tint of russet-brown on the tail. In *T. swainsoni* the upper surface is often dusky olive-brown and the tail partakes of the same colour as the back, the ruddy tint is not perceptible, and the wings are also externally darker and do not show so much rufous. It is often extremely difficult to separate these dark *Turdus swainsoni* from *T. aliciæ*, and I have found Mr. Ridgway's character of the pale orbital ring of great assistance in separating the specimens. Needless to say, I have received great assistance from the determination of the specimens in the Henshaw Collection which were named by Mr. Ridgway and Dr. Henshaw before the collection was despatched to Europe. With the large series at my disposal I can only say that a perfect intergradation between *T. ustulatus* and *T. swainsoni* appears to exist, and I only keep them separate because Mr. Seebohm has figured them as distinct.

Some specimens are scarcely distinguishable from *T. aliciæ*, and are equally dark above and have dark grey flanks; one specimen from Corpus Christi, Texas, closely resembles a skin of *T. aliciæ* from Concord, Mass. (Henshaw Coll.), but has the distinct eyelid of *T. swainsoni* as well as the larger pale mirror on the quill-linings, while the sides of the face are buff, not grey. In fact one of the chief characteristics of this species seems to be the well-marked light patch at the base of the inner aspect of the quills, which is almost Geocichline in character. Mr. Ridgway, in his 'Manual,' separates *T. ustulatus* and *T. swainsoni* on account of the very distinct ring of feathers round the eye, a very good character when the skins are well-prepared, but one which fails when the taxidermist has been careless, or when a shot has damaged the plumage of the head.

Mr. Ridgway (Expl. 40th Parallel, Orn. p. 397) gives the soft parts as follows:—"Bill black, the basal half of the lower mandible pale brownish-lilac; iris sepia-brown; tarsi pale lilac-brown, the toes darker."

The specimen figured is a Californian one in the Seebohm Collection. [R. B. S.]

TURDUS SWAINSONI, *Cabanis.*

OLIVE-BACKED THRUSH.

Brown Thrush, Penn. Arctic Zool. ii. p. 337 (1785).
Little Thrush, Penn. Arctic Zool. ii. p. 338 (1785).
Turdus minor, Gm. Syst. Nat. i. p. 809 (1788).
Turdus fuscus (nec Müll.), Gm. Syst. Nat. i. p. 817 (1788).
Turdus solitarius (nec Müll.), Wilson, Amer. Orn. v. pl. xliii. fig. 2 (1812).
Merula wilsonii (nec Bp.), Swains. & Richards. Faun. Bor.-Amer., Birds, p. 182 (1831).
Merula olivacea (nec Linn.), Brewer, Proc. Bost. Soc. Nat. Hist. i. p. 191 (1844).
Turdus olivaceus, Giraud, B. Long Isl. p. 92 (1844).
Turdus swainsoni, Cab. in Tschudi's Faun. Peruan. p. 188 (1846); Seebohm, Cat. Birds Brit. Mus. v. p. 201 (1881).
Turdus minimus, Lafr. Rev. Zool. 1848, p. 5.
Turdus (Hylocichla) swainsoni, Coues, B. Color. Vall. p. 35 (1878).
Hylocichla ustulata swainsoni, Ridgw. Proc. U.S. Nat. Mus. iv. p. 207 (1881).
Hylocichla swainsoni, Ridgw. Proc. U.S. Nat. Mus. iv. p. 375 (1882).
Turdus ustulatus swainsoni, Coues, Check-list N. Amer. B. p. 24 (1882).

T. similis *T. ustulatæ* et annulo periophthalmico distinctissimo insignis: notæo tamen, alis caudâque, sordidè olivaceis: hypochondriis griseis vel sordidè brunnescentibus: plagâ pallidâ ad basin primariorum conspicuâ: axillaribus clarè fulvescentibus.

This is only a dark-coloured race of *T. ustulatus*, the back being dusky olive-brown, with the tail of the same colour as the back; the flanks are brown or grey with an admixture of brown or rufous, and they are always dusky in tint; the light space at the base of the quills is large and Geocichline in character, and the axillaries have a good deal of buff on them.

The present species is much more widely distributed than its western ally, *T. ustulatus*, and Mr. Ridgway, in his latest 'Manual,' gives the range of *T. swainsoni* as follows:—Eastern North America, but west to and including the Rocky Mountains (as far as the East Humboldt Mountains and the Upper Columbia), breeding chiefly north of the United States, wintering from the Gulf States and Mississippi Valley south to Cuba, Guatemala, Costa Rica, Panama, and Peru.

The Olive-backed Thrush has been noted from Fort Yukon in Alaska by Mr. Turner, who obtained a single specimen (Contr. Nat. Hist. Alaska, p. 183). Again, Mr. Townsend records the species from Northern Alaska on the 6th of June, 1886. He considers the bird to be probably a migrant, but draws attention to the lateness of the date (Auk, iv. p. 11).

Mr. E. W. Nelson, on the other hand, says that "from the observations and collections made on the Upper Yukon, the Olive-backed Thrush appears to be a common summer resident there, and thus extends its breeding-range within the Arctic Circle. It appears to be influenced to a great extent in its range by the presence or absence of woods, and its northern limit may be marked as coinciding with the tree-limit. *Turdus aliciæ*, on the contrary, extends beyond

this, wherever a bunch of dwarf willows will give it shelter, to the very shores of the Arctic and Bering Seas. There is no record of *T. swainsoni* from the coast-region of south-eastern Alaska, nor from the islands of Bering Sea, nor is it likely to occur in the latter portion of the Territory, owing to its preference for a wooded region. Both species breed together throughout, perhaps, the entire course of the Yukon, but on the lower portion of the river *T. aliciæ* is far more numerous." There is no specimen of *T. swainsoni* in Mr. Nelson's series of Alaskan skins in the Henshaw Collection.

He further observes:—"On the coast of Bering Sea, where the Grey-cheeked Thrush (*T. aliciæ*) is abundant, this species is very rare or does not occur at all. In the interior, however, it appears to increase in numbers as the distance from the sea-coast increases. Among a considerable series of Thrushes secured, there are but two specimens of this bird, one of which is from Nulato and the other from Anvik, both on the Yukon, several hundred miles from its mouth. Dall speaks of this as a common bird, breeding all along the Yukon to the sea-coast, but he evidently referred to the Grey-cheeked Thrush, which is abundant along the Lower Yukon; whereas *T. swainsoni* is comparatively rare, as shown by its rarity in the collections brought me by the fur-traders and natives from various parts of the Territory, and from the fact that I did not find it at the mouth of the Yukon during the spring of 1879. Among my series of *T. aliciæ* are a number having a distinct buff shade on the breast and upon the sides of the neck, thus resembling *T. swainsoni*; and it would not be surprising to find occasional cases of crossing, since the two occupy the same territory in many places. *T. swainsoni* has been found to be a common breeding species on the Upper Yukon, whence eggs have been sent to the Smithsonian Institution from several points, including Fort Yukon. I have seen a specimen from Anvik, which is my lowest record on the Yukon."

A specimen collected by J. K. Lord in British Columbia is in the British Museum, and Mr. Rhoads records the species as occurring in that Territory in spring and summer (Auk, x. p. 16). Blakiston met with it on the Saskatchewan (Ibis, 1862, p. 4) and at Fort Carlton (Ibis, 1863, p. 58), and Mr. Thompson states that it is a common summer resident in Manitoba, arriving about the 12th of May. Messrs. Baird, Brewer, and Ridgway observe that numbers of specimens of this Thrush have been received by the Smithsonian Institution from the Great Slave Lake.

In Ontario, Dr. McIlwraith regards the Olive-backed Thrush as a spring and fall migrant, but Dr. C. Hart Merriam found it breeding at Point de Monts in the Province of Quebec (Bull. Nutt. Orn. Club, vii. p. 234). On the Upper St. John River, Mr. Batchelder records it as common at Grand Falls and Fort Fairfield, and he found it nesting near Houlton (Bull. Nutt. Orn. Club, vii. p. 108). It is very abundant in summer on Prince Edward Island, according to Mr. Dwight (Auk, x. p. 14), and it was also observed in summer by Mr. F. H. Allen in the Bras d'Or region on Cape Breton Island (Auk, viii. p. 165). Dr. Bishop has likewise found the species breeding on the Magdalen Islands (Auk, vi. p. 149).

Mr. Verrill reports it as very common on Anticosti (Proc. Bost. Soc. N. H. ix. p. 137), and Mr. Brewster also met with it at Fox Bay on the same island in July (*op. cit.* xxii. p. 369). Specimens were obtained on the 13th of June and in July 1860, at Rupert House, on James Bay, by Drexler (*cf.* Turner, Proc. U.S. Nat. Mus. viii. p. 235).

In Mr. Stearn's 'New England Bird Life' (i. p. 57), edited by Prof. Elliott Coues, the following note is given:—"The range of the Olive-backed Thrush in New England is closely coincident with that of the Hermit. Like the latter, it breeds in the Canadian, and is a migrant in the Alleghanian Fauna. It is rather less abundant than the Hermit, especially during the migrations, in most localities; moreover, it arrives rather later in the spring, and does not linger so long in the

autumn. Entering Connecticut early in May, it passes on to the Canadian Fauna during that month; a few doubtless breed in elevated portions of Massachusetts, but the majority go farther north. Leaving its breeding-grounds early in September, it is commonly seen in southern New England during that month and about half of October, generally in small, straggling companies, which flit secretly through the woods and shrubbery, or ramble quietly over the ground among fallen leaves. In some parts of Maine and New Hampshire it is the commonest Thrush, except the Robin, during the breeding-season." Mr. Bicknell (Journ. Linn. Soc. New York, i. pp. 141, 142) has recorded it as breeding on the Slide Mountains in New York, and Dr. C. Hart Merriam in the Eastern Adirondacks (Bull. Nutt. Orn. Club, vi. p. 226). On the White Mountains in New Hampshire it is common at the higher levels, according to Messrs. Faxon and Allen (Auk, v. p. 153), and Dr. Chadbourne noticed it as plentiful in the same locality up to 3000 feet (Auk, iv. p. 107).

Dr. Warren believes that the present species breeds occasionally on the higher mountains of Pennsylvania, but the only actual record for the State seems to be that of Mr. Dwight (Auk, ix. p. 140). He found it only on North Mountain in the Pennsylvanian Alleghanies, but quite abundant there in summer.

Mr. White found the Olive-backed Thrush to be a common summer resident on Mackinac Island in Northern Michigan (Auk, x. p. 229), and in Minnesota Dr. Hatch states that it arrives late in April or in the early part of May; it is abundant for a short time, but moves northward then, only a few comparatively remaining to breed, and those principally in the northern counties of the State (B. Minnesota, p. 439). In S.E. Dakota, Mr. Agersborg only notes the species as a migrant, arriving the last week in April and returning in October (Auk, ii. p. 277). Prof. Elliott Coues (Bull. U.S. Geol. Surv. iv. p. 550) thinks that, like the Hermit-Thrush, this species may breed in the Rocky Mountains near Chief Mountain Lake. "It was only observed, however, in September, during the general autumnal migration, in the slight fringe of trees along the stream where I was collecting at the time. In a country so nearly treeless as is the tract lying between the Red River and the Rocky Mountains, the slightest pieces of woodland are eagerly sought by all the migrants as stopping-places for food and rest. Though at other seasons tenanted by few species, they become populous in the fall by the presence of great numbers of small insectivorous and granivorous species, among which the *Turdidæ*, *Sylvicolidæ*, and *Fringillidæ* are conspicuous."

At Fort Keogh, in Montana, Mr. Thorne (Auk, xii. p. 219) records the present species as abundant in spring, but rare in the fall of the year. Messrs. Richmond and Knowlton procured young birds on the 27th of July at Mystic Lake (Auk, xi. p. 308), and Mr. Williams found the species breeding at Belt River Cañon (Auk, vii. p. 292). Dr. Merriam mentions the finding of a nest in Teton Basin, in Idaho, in July 1872 (N. Amer. Fauna, no. 5, p. 108). In the Colorado Valley it was only noticed as a migrant by Mr. Henshaw (Rep. 100th Merid. p. 147), but it also breeds in the State, as Mr. Minot (Bull. Nutt. Orn. Club, v. p. 224) says that it is a common summer resident above 8000 feet, and he found it on Pike's Peak from 9500 feet to 10,500 feet.

Mr. Ridgway, in his report on the Ornithology of the 40th Parallel (p. 397), writes as follows:—"After leaving the Sierra Nevada, not a single individual of any of the smaller Thrushes was met with until we arrived at the East Humboldt Mountains in eastern Nevada, where the Olive-backed Thrush was encountered in considerable numbers, in the eastern cañons of that range. It was during the season of their southward migration, and it is uncertain whether they came from the northward, or whether they had bred in the cañons where they were observed. During the ensuing spring and summer they were found in still greater abundance among the Wahsatch Mountains, on the opposite side of the Salt Lake Basin, in the thickets bordering

the cañon streams, particularly in the elevated 'parks,' thus occupying a region intermediate between that of the Rocky Mountain Hermit-Thrush (*T. auduboni*) of the Pine-region, and that of the Tawny Thrush (*T. fuscescens*) of the lower valleys."

During the Death Valley Expedition, Dr. Fisher says that this Thrush was reported by Mr. Belding as common in the Yosemite Valley in California in June, and Mr. Nelson secured a female on the northern end of the Paramint Mountains on the 1st of May (N. Amer. Faun. no. 7, p. 145).

The Olive-backed Thrush is only known as a migrant in the following States:—Illinois (Ridgway, Ann. Lyc. N. Y. x. p. 365); Ohio (Oberholzer, List B. Wayne Co. p. 338) in October, but not observed in spring; Indiana, spring and autumn migrant in Carroll Co., but not common (Evermann, Auk, vi. p. 31); Iowa, spring migrant (Jones, Auk, xii. p. 124); Western Missouri, spring migrant (Scott, Bull. Nutt. Orn. Club, iv. p. 140). Specimens procured in spring are in the Henshaw Collection from Washington, D.C., Illinois, Virginia (Gainsville, Prince William Co.), and a large series from Denver and Colorado Springs in Colorado.

No specimens are in the British Museum from any of the South-eastern or Gulf States, but the species has been recorded from Roane Co., in Tennessee, as having been once seen by Mr. Fox on the 26th of April, 1885 (Auk, iii. p. 215). In Florida it is said by Mr. Scott to be rather common at Key West in April and May (Auk, vii. p. 119), and in the Caloosahatchie Region it is known as a spring and fall migrant (Auk, ix. p. 214). A specimen from Bermuda, collected by Captain Savile Reid, is in the British Museum. In Cuba the species is an accidental visitor (Cory, Auk, iii, p. 2).

Returning to the continental range of the species, we learn that in Texas it is generally not rare during migration (Nehrling, Bull. Nutt. Orn. Club, vii. p. 7). It has been observed as a migrant near San Antonio by Mr. Attwater, and in the Salvin-Godman Collection is a specimen obtained by Mr. F. B. Armstrong at Corpus Christi in October. In Western Texas Mr. Lloyd says that it was noted by him as a fall migrant; rare in Tom Green Co., and not observed in Concho Co. (Auk, iv. p. 298). In New Mexico Mr. Henshaw states that it was fairly numerous in the autumn, arriving about Sept. 13 (Auk, ii. p. 330).

The occurrence of *T. swainsoni* in Mexico has hitherto lacked confirmation, though Dr. Sclater has recorded the species (s. n. *Turdus minor*) from Orizaba (P. Z. S. 1857, p. 212), and Lawrence (s. n. *T. swainsoni*) from Tehuantepec (Bull. U.S. Nat. Mus. iv. p. 11). Messrs. Salvin and Godman, however, have received undoubted specimens of this Thrush from Mr. W. B. Richardson, from San Cristobal in Chiapas in April, and from Jitotol in the same province, procured in May.

In Guatemala it has been recorded by Count von Berlepsch as having been found by Sarg at Coban, and a specimen is now in the Salvin-Godman Collection. Carmiol has sent others from Barranca, Frailes, and Cervantes in Costa Rica (Lawrence, Ann. Lyc. N.Y. ix. p. 91), and Mr. Rogers procured the species in the Irazu district (Salvin and Godman, Biol. Centr.-Amer., Aves, i. p. 11). Mr. Cherrie also records a specimen as having been obtained by Señor S. Alfraro near San José on the 7th of November, 1867 (Auk, vii. p. 337). It had already been recorded from Costa Rica by Von Frantzius (J. f. O. 1869, p. 289).

In Nicaragua, Mr. Richmond noticed it on the Escondido River on the 3rd of October, and saw a large flock on the 14th of the same month (Proc. U.S. Nat. Mus. xvi. p. 482). M'Leannan procured it at Lion Hill in Panama (Lawrence, Ann. Lyc. N.Y. viii. p. 7), and Hughes at Paraiso (Salvin and Godman, *t. c.* p. 11).

In Colombia it would appear to be common in winter, as several Bogotá skins are in the British Museum, and Salmon met with the species at Medellin (Scl. & Salvin, P. Z. S. 1879, p. 491).

Specimens collected by Buckley at Jima, in Ecuador, are in the Salvin-Godman Collection, and Fraser obtained the species at Gualaquiza (Sclater, P. Z. S. 1858, p. 451). Mr. O. T. Baron has met with it at many places on the Peruvian Andes, at Leimebamba (8500 feet) in December, Levanto (9000 feet) in November, and at San Pedro (9000 feet) in both these months. His later collections contain specimens from Vina, Huamacho (5000 feet), obtained in February and March. A Bolivian example from Bridges's Collection is in the British Museum.

Von Pelzeln has recorded the Olive-backed Thrush from Cocuy in Brazil, where it was found by Natterer at the foot of the mountain in February, and the same celebrated collector obtained the species at Maribatanas in March (Orn. Bras. p. 92).

Swainson's Thrush has been recorded from Heligoland and from Holstein by Gätke (B. Heligoland, Engl. ed. p. 242), and by Prof. Giglioli from Italy (Avif. Ital. p. 100). According to the last-named authority, one was taken near Genoa in the autumn of 1843, and another is in the museum at Roveredo.

The habits of the Olive-backed Thrush do not seem to differ from those of the other small species which are its allies. Mr. Stearns, in his 'New England Bird Life,' writes:—"Its usual resorts are similar to those of the Hermit, but the mode of nesting, as well as the egg, is quite different, though the structure of the nest itself is much the same. The nest is built not upon the ground, but in a bush or small tree, at a man's height, or beyond it. The first set of eggs is laid about the 1st of June, and there may be a second set five or six weeks later. These are usually four in number, dull greenish-blue in ground-colour, but freely speckled with brownish. In size they are not distinctively different from those of the Hermit, but may average a trifle larger. The Olive-back has a pleasing song while mating and nesting, and is not at all chary of its vocalization at such times; but nothing will be heard from it during the migrations except a sharp, abrupt call-note. Its general habits and tastes are like those of the Hermit, the most evident difference between the two birds being in the position of their nests and the times of their migrations."

Mr. Williams has given the following interesting note on the species in his paper on the "Birds of the Belt River Cañon, Montana":—"Abundant during the breeding-season, appearing in considerable numbers about the middle of May and again in the second or third week in September all along the lower valley streams. The earliest date I have noted their arrival in spring is May 10th, and at this season they do not tarry long away from their breeding-grounds. In the fall they appear from the higher elevations about September 1st, and remain till October 10th at least. Throughout the summer the Olive-back is only found in the mountains and, like the Willow Thrush, at but very short distances from water, but, unlike that species, the male is not satisfied with an elevation of only a few feet, when towards evening he pours forth his curious lay to his shy mate below. At such times the most prominent limb of some tall cottonwood is none too lofty a perch.

"About the first of July I camped for several days in a grove that seemed a chosen resort for Olive-backs. Regularly, an hour or so before dark, a bird would be heard from some topmost branch, and scarcely would he be through, before another would answer from a few rods away, only to be followed by still another, till half a dozen or more could be heard from different localities. Nor would they cease until the last rays of daylight were rapidly disappearing from the western sky. In early morning they were not nearly so active. In regard to the song itself, the birds almost always begin by several call-notes, interspersed with various odd chucks, then the ringing melody, characteristic of the Willow-Thrush's song, is produced, winding rather abruptly with some fine, weaker notes. Occasionally they would utter the first call-notes and 'chucks' without anything following, but I never heard the latter and more pleasing part

of the song without the prelude. They were so excessively shy that it was some time before I actually identified the song as belonging to this bird. Usually long before getting within anything like shooting distance the notes would cease, and while vainly endeavouring to catch a glimpse of the shy performer through the dense foliage above, suddenly his mocking call-note would come from some impenetrable thicket near by. Its range of altitude during the breeding-season is from 4200 to 5000 feet."

Mr. Dwight in his paper on the "Summer Birds of Prince Edward Island," writes:—"Very abundant. They are usually excessively shy and difficult to obtain, although several may be singing within hearing at the same time. They frequent thick growths of spruces, and from some commanding perch pour forth their rich song. If they become aware of your approach even a gunshot or more away, they dive down into the dense undergrowth, and a few soft alarm-notes are the last you hear of them. Squeaking to them will bring them to you for one brief look, which satisfies them, but not you, for they generally see you first and at close range. Sometimes they sing in the thickets of spruces, but are more apt to have a particular perch, perhaps on some towering dead tree. I heard no songs that I had any reason to suppose were other than true *T. swainsonii*, for the possibility of finding *T. bicknelli* or *T. aliciæ* had to be kept constantly in mind. I found no young even up to the last day of my stay, but that proves nothing with a bird so retiring. They sang more persistently and in greater numbers in the early morning and late evening hours."

Mr. Bicknell gives the following note on the song of this Thrush (Auk, i. p. 129):—"This Thrush is in full song during its migration, which occupies the latter half or two-thirds of May, but is commonly silent in the autumn. It is, however, probable that singing may be indulged in at that season, for I was assured by one who was familiar with the song of the species, that several were heard singing at Bay Ridge, Long Island, September 26, 1880, at the height of their migration.

"On their arrival in September the new plumage has not always completed its growth. In many specimens growing feathers are scattered over the body and often some of the remiges have their bases still soft, or even sheathed by the matrix of the feather. When the birds first appear they have begun to develop adipose tissue, and it is not long before they become excessively fat."

Mr. Nelson writes:—"A set of eggs was brought me in June 1878 from Nulato; they measure respectively $0{\cdot}89\times0{\cdot}65$ and $0{\cdot}94\times0{\cdot}67$ inch. The ground-colour is blue, exactly like the eggs of *T. aliciæ*, with scattered purplish shell-markings and fine specks of reddish-brown, which latter are much more numerous at the larger end. The nest is composed of dried grass-stems with a few fragments of moss, which are scattered through the structure as if by accident. The eggs of this species and of *T. aliciæ* are absolutely indistinguishable, both in size and shape, as are also the nests, according to the observations I have been able to make."

The specimen figured in the Plate is an adult bird, from Pennsylvania, in the Seebohm Collection. [R. B. S.]

TURDUS PALLASI, *Cabanis*.

EASTERN HERMIT-THRUSH.

Turdus solitarius (nec Linn.), Wilson, Amer. Orn. v. p. 95 (1812).
Turdus minor (nec Gm.), Bp. Journ. Philad. Acad. iv. p. 33 (1824).
Merula solitaria, Swains. & Richards. Faun. Bor.-Amer., Aves, p. 184 (1831), pl. xxxv. (err. pro tab. xxxvii.).
Turdus nanus, Audub. Orn. Biogr. v. p. 201, pl. 419 (1839). [*Cf.* Ridgw. Proc. U.S. Nat. Mus. iii. p. 2 (1880).]
Turdus guttatus (nec Pall.), Cab. in Tschudi, Faun. Peruan. p. 187 (1845).
Turdus pallasii, Cab. Arch. f. Naturg. 1847, p. 305.
Turdus guttatus pallasi, Ridgw. Orn. 40th Parallel, p. 395 (1877).
Turdus (*Hylocichla*) *pallasi*, Coues, B. Colorado Valley, p. 20 (1878).
Turdus aonalaschkæ pallasi, Ridgw. Proc. U.S. Nat. Mus. iii. p. 1 (1880).
Hylocichla unalaschkæ pallasi, Ridgw. Proc. U.S. Nat. Mus. iii. p. 166 (1880).
Turdus unalascæ nanus, Coues, Check-l. N. Amer. B. p. 24 (1882).
Hylocichla pallasi, Stejneger, Proc. U.S. Nat. Mus. v. p. 463 (1883).
Turdus nanus, Bicknell, Auk, i. p. 131 (1884).

T. minor: remige secundo quintum haud æquante: supracaudalibus rectricibusque rufis, minimè dorso concoloribus: rostro crassiusculo: subalaribus pallidè fulvis, axillaribus quoque externè pallidè fulvescentibus vel albidis.

This constitutes the eastern race of the Hermit-Thrushes, and the range is given by Mr. Ridgway, in his latest edition of the 'Manual of North American Birds,' as follows:—"Eastern North America, breeding from the northern United States northward, and wintering from about 40° to the Gulf Coast." In Europe it is said to have occurred in Heligoland, in Germany, and in Italy.

The breeding-range of this Hermit-Thrush appears to extend over a wide area, for it has been found nesting in British Columbia by Mr. Rhoads round Lake La Hache (Auk, x. p. 24). He writes as follows:—"The presence of this species breeding in the region around Lake La Hache, British Columbia, as attested by four skins in my collection, further complicates the relationships of this genus in the North-west. Neither *T. auduboni* nor *T. pallasii* were found in any other part of British Columbia. I found *T. aonalaschkæ* breeding in the Rocky Mountains at Field. It is doubtful if *T. auduboni* reaches the forty-ninth parallel. If, as seems probable, it be found that *T. pallasii* and *T. aonalaschkæ* breed indifferently across common ground in the central and Rocky Mountain regions of British Columbia, without the intervention of intergrades, a more definite separation of the two is necessitated. Owing to the limited series obtained in evidence of this fact, a satisfactory conclusion cannot now be reached. Two points at least are established: first, the breeding of *T. aonalaschkæ* in the Rocky Mountains; second, the breeding of *T. pallasii* west of the Rockies and south of the fifty-second parallel."

The single specimen in the British Museum from the 49th Parallel, obtained during the Boundary Survey in 1873, is undoubtedly referable to *T. pallasi*, and the following note of Dr. Coues (Bull. U.S. Geol. Survey, iv. p. 549) appertains to the same bird:—"The Hermit-Thrush was not

observed during the Survey until toward the close of the second season, when specimens were taken in the Rocky Mountains near Chief Mountain Lake, under circumstances which left no doubt of the breeding of the species in that vicinity. As it is, however, a common species of wide distribution in North America, it is doubtless to be found, like the Robin [*Merula migratoria*], wherever timber grows, along the line of the northern boundary."

In Manitoba it is a common summer resident, according to Mr. Ernest Thompson (Proc. U.S. Nat. Mus. xiii. p. 604). In Ontario Dr. McIlwraith records it as a migrant in spring and fall, arriving about the middle of April and departing about the 7th of May" (Proc. Essex Inst. v. p. 84).

Dr. Hart Merriam found it breeding near Point de Monts in Quebec, in July (Bull. Nutt. Orn. Club, vii. p. 284). Mr. Brewster found the species along the south shore of Labrador and again on Anticosti Island, where it was common (Proc. Bost. Soc. N. H. xxii. p. 369); in the latter island it was also plentifully noticed by Mr. Verrill (*op. cit.* ix. p. 137). On the Magdalens Dr. Bishop found it common and breeding in July, and says that it was noticed on most of the islands (Auk, vi. p. 149). The Hermit-Thrush was also observed everywhere in the Restigouche Valley in New Brunswick in July by Messrs. Brittain and Cox (Auk, vi. p. 119), and in Prince Edward Island and Cape Breton Island in summer by Mr. Dwight (Auk, iv. p. 16, x. p. 15).

On the Upper St. John River Mr. Batchelder found the species breeding at Grand Falls on the 30th of May (Bull. Nutt. Orn. Club, vii. p. 108), and it nests on the mountains of the New England States, whence there are numerous records from Maine to Connecticut, where Mr. Faxon found this Thrush abundant on Bear Mountain (Auk, vi. p. 46), and Mr. Treat obtained two nests at Norfolk in June (Sage, Auk, x. p. 371).

The Hermit-Thrush also breeds in Pennsylvania. Mr. Dwight, in his paper on the summer birds of the Pennsylvania Alleghanies, writes as follows :—"Among some scattered pines at the top of Wopsononock Mountain I found a pair feeding their young. As the abundance of this species can best be determined about sunset, when every male is pouring forth its evening song, I cannot say how abundant it is at this point. It was not encountered at Cresson, but in the deep woods of North Mountain it found a congenial home and was very numerous. Often it was possible to distinguish a dozen singing at the same time in the early morning or the late evening hours. There was an overhanging cliff commanding a deep, narrow valley, whence at sunset even a greater number might be heard, their notes blending with those of the Olive-backed and Wood Thrushes."

Mr. Witmer Stone (Auk, xi. p. 182) records the species as a summer bird of the Pocono Mountains in Pennsylvania, and observes :—"The elevation and location of the Pocono plateau is such as to warrant a fauna quite as local as that found at Harvey's Lake and North Mountain (*cf.* Stone, Proc. Philad. Acad. 1891, p. 431)." It was abundant and breeding in Northern Elk Co., according to Mr. Baily (Auk, xiii. p. 296). Mr. Nehrling says that it is a rather common summer resident in the woods of central and northern Wisconsin; and although in Minnesota it is principally known as a migrant, Dr. Hatch (B. Minnesota, p. 441) says that "numbers enough remain during the summer." On Mackinac Island in Northern Michigan, Mr. White states that the present species is a common summer resident (Auk, x. p. 230).

In the Central United States the Hermit-Thrush is known as a migrant only. Such is the case in Illinois, Ohio, and Indiana; but a few winter even as far north as the Hudson River (Mearns, Bull. Nutt. Club, iv. p. 33), and Mr. Nehrling says that they have also been known to winter in Southern Illinois and in the neighbourhood of Washington, D.C.

A specimen from Quantico, Virginia (Feb. 22), is in the Henshaw Collection. In Kentucky it is a common migrant (Pindar, Auk, vi. p. 316), and in South Carolina Mr. Loomis records it as very common in winter up to April 21 (Bull. Nutt. Orn. Club, iv. p. 210). In Alabama it was noticed by Mr. N. C. Brown from January 1st to April 30th (Bull. Nutt. Orn. Club, iii. p. 169), and in

Louisiana Mr. Beckham has recorded it from Bayou Sara, as observed from the 1st to the 28th of April; he considers it to be a winter visitor to the State (Auk, iv. p. 306). Mr. Nehrling says that this Thrush "passes the winter in great numbers in Louisiana, Mississippi, Alabama, and especially in Florida." A large series of skins is in the Salvin-Godman Collection, obtained by Mr. W. E. D. Scott at Tarpon Springs from Feb. 13 to April 12, and again in October. Mr. Scott states (Auk, vii. p. 120) that it is a common migrant and winter resident on the Gulf Coast of Florida, and was found abundantly at Punta Rassa in winter by Mr. Atkins, who also obtained a specimen at Key West in January. At Gainsville Mr. Chapman met with it abundantly from January to the 15th of April (Auk, v. p. 277). Mr. Wayne states that it occurs in Florida from February to June (Auk, xii. p. 366), and Messrs. Brewster and Chapman noticed it on the Suwanee River in March and April (Auk, viii. p. 138). In the Caloosahatchie region Mr. Scott records it as a migrant and winter resident (Auk, ix. p. 214).

The Salvin-Godman Collection contains specimens obtained by Mr. F. B. Armstrong in Texas, at San Patricio in December, at Papalote in Bee County on the 26th of January, and at Corpus Christi in November and December. At San Antonio Mr. Attwater says it is a rare migrant and winter resident (Auk, ix. p. 344). Mr. Lloyd obtained a single specimen in Eastern Concho Co. in Western Texas during the spring migration (Auk, iv. p. 298).

A specimen from "Mexico" is in the Seebohm Collection, purchased from a dealer, and the Henshaw Collection contains one marked as from Orizaba. A single skin, undoubtedly referable to *T. pallasi*, was obtained by Mr. Salvin at Coban in Vera Paz, Guatemala, in November 1859 (Ibis, 1860, p. 272).

A skin from "California," without further credentials, is in the British Museum (*cf.* Seebohm, Cat. Birds Brit. Mus. v. p. 198). It may be further remarked that not a single specimen of *T. pallasi* from Colorado is in the Henshaw Collection, and therefore Mr. Nehrling's statement that it occurs in that State at an altitude of from 1000 to 8000 feet probably refers to some other species.

Dr. Elliott Coues, in the 'Birds of the Colorado Valley,' writes:—"Great injustice would be done were the Hermit's musical powers overlooked in any sketch, however slight, of its life-history. The earlier authors were evidently unaware of its accomplishments, for its melody is lavished on the gloom of the swamp, or lost in the darkening aisles of the forest, where years passed by before the ear of the patient and toiling student of nature was gladdened by the sweet refrain. Wilson denies its song; Audubon speaks of 'its single plaintive note,' though he adds, perhaps upon information received from his friend Dr. Pickering, that 'its song is sometimes agreeable." Nuttall seems to have first recognized the power and sweetness of the lay of our Hermit: he compares it to the famous Nightingale, that sweet princess of song, and ranks it far above the Wood-Thrush. Later writers agree in this high estimate of the bird's powers, though it may be questioned whether a comparison unfavourable to the Wood-Thrush is a perfectly just discrimination. The weird associations of the spot where the Hermit triumphs, the mystery inseparable from the voice of an unseen musician, conspire to heighten the effect of the sweet, silvery, bell-like notes, which, beginning soft, low, and tinkling, rise higher and higher, to end abruptly with a clear, ringing intonation. It is the reverse of the lay of the Wood-Thrush, which swells at once into powerful and sustained effort, then gradually dies away, as though the bird were receding from us; for the song of the Hermit first steals upon us from afar, then seems to draw nearer, as if the timid recluse were weary of solitude, and craved recognition of its conscious power to please. Yet it is but a momentary indecision—true to a vow of seclusion, the anchorite is gone again to its inviolate grotto in the fastnesses of the swamp, where a world of melody is wasted in its pathetic song of life."

Mr. Nehrling gives the following notes on the species:—"The highly interesting Hermit-Thrush might be called the 'May Blossom' of our birds. Its charms are manifold, but the enthusiastic observer and lover of birds is rarely able to penetrate the solitude of its swampy northern woodland home. In the Eastern States the Hermit is one of the best known and most common of our Thrushes, at least occasionally in spring and autumn. Usually it is confounded with the similar but somewhat larger Olive-backed Thrush, from which it may be distinguished at the very first glance by its reddish-brown tail. On this account the bird is sometimes called the Rufous-tailed Thrush. It further differs from the Olive-back, by appearing in spring fully two weeks sooner and returning two or even three weeks later in the fall. Being restricted to the Canadian fauna it nests only in the Northern and in the high mountain woods of the the Eastern States, but it is abundant in many parts of the Middle States during migration. The Southern States are its winter-quarters. I have observed the Hermit every year in small companies or in pairs in Illinois from about the beginning to the middle of October and in Southern Missouri towards the end of the same month. At this time they fearlessly and unsuspectingly enter gardens close to dwellings and look for insects on the ground and among the fallen leaves. I found them most common along the bushy, low, and damp edges of woods, which are at this time the favourite resort of a great number of different birds bound for the south or north. Finches—especially Fox-coloured Sparrows, White-crowned Sparrows, White-throated Sparrows, Slate-colored Juncos, and others—are the constant companions of the Hermit. In spring it is the first of all the smaller Thrushes to return from its winter-quarters. Even in the beginning of April I have seen these birds on their way to their northern breeding haunts. They often tarry from one to two weeks before deciding to continue their journey.

"During its stay in spring it will return daily with great regularity to the same clump of trees or thickets, and to the same garden. In the neighbourhood of Houston, Texas, and thence westward to Austin, it is one of the most common winter visitors. It keeps in the dense shrubbery that borders the bayous, rivers, creeks, and branches, along the margins of the bottom woods and in the neighbourhood of fields, but always where it has as companions, besides the birds above mentioned, hundreds of Cardinals, Towhees, Thrashers, Yellow-breasted Chats, Carolina Wrens, Myrtle Birds, and many others. Here, too, the Hermit seeks the greater part of its food on the ground, though it eats many berries, especially those of the holly and Mexican mulberry. On entering, some time between November and March, their sheltered haunts, overgrown mostly with evergreen trees and shrubs, such as the magnificent magnolias, hollies, cherry-laurels, wax myrtles, red bay, loblolly bay, and many deciduous trees, a whole host of the most varied species of birds rises from the ground to settle on the trees and bushes. All remain perfectly silent; only the Hermit utters a soft 'chuck.' While residing in my simple cabin in the woods near the Yegua Creek, in Texas, I had the best of opportunities during the whole winter to observe these Thrushes in my immediate neighbourhood. Though there were hundreds of them in the thickets near the creek, I never saw more than from six to ten individuals together, and these were usually scattered over a considerable portion of the woods. At the warning note of one of these Thrushes not only all other Hermits but even the swarms of Finches and other birds rapidly disappeared in the nearest tangled thickets. I never heard the song during their winter stay or during migration. Towards the end of February and the beginning of March they begin to leave South-eastern Texas, and by the middle of the latter month the last stragglers seem to have departed for the north."

Mr. John Burroughs, in his little book 'Wake-Robin,' gives a very beautiful description of the song of the Hermit-Thrush. He observed this bird especially in the Adirondac Mountains. The description shows what an eye and ear he has for everything beautiful in nature:— "Ever

since I entered the woods, even while listening to the lesser songsters, or contemplating the silent forms about me, a strain has reached my ears from out the depths of the forest that to me is the finest sound in nature—the song of the Hermit-Thrush. I often hear him thus a long way off, sometimes over a quarter of a mile away, when only the stronger and more perfect parts of his music reach me; and through the chorus of Wrens and Warblers I detect this sound rising pure and serene, as if a spirit from some remote height were slowly chanting a divine accompaniment. This song appeals to the sentiment of the beautiful in me, and suggests a serene religious beatitude as no other sound in nature does. It is perhaps more of an evening than a morning hymn, though I hear it at all hours of the day. It is very simple and I can hardly tell the secret of its charm. 'O spheral, spheral!' he seems to say; 'O holy, holy! O clear away, clear away! O clear up, clear up!' interspersed with the finest trills and the most delicate preludes. It is not a proud gorgeous strain, like the Tanager's or the Grosbeak's; suggests no passion or emotion,—nothing personal,—but seems to be the voice of that calm sweet solemnity one attains to in his best moments. It realizes a peace and a deep solemn joy that only the finest souls may know. A few nights ago I ascended a mountain to see the world by moonlight; and when near the summit the Hermit commenced his evening hymn a few rods from me. Listening to this strain on the lone mountain, with the full moon just rounded from the horizon, the pomp of your cities and the pride of your civilization seemed trivial and cheap."

Mr. Bicknell writes, in his paper on the "Singing of Birds," with regard to the present species:—"Though this little Thrush is always to be found with us during its migrations, it was only after some years of observation that I discovered that it ever sang near the sea-coast in this latitude. Either it is very furtive-voiced while it is with us, or singing is exceptional. Twice only have I heard its song away from its summer home—April 26, 1878, and April 29, 1879. In both cases the songs were faint and of an unfinished character, and positive identification only satisfied me that they were of this species. It is probable that this Thrush sings occasionally in the autumn; for there is little doubt that I heard it Oct. 18, 1880. It was in the dusk of the early morning, and the song, though several times repeated, was not clearly heard. It was, however, from a *Hylocichla*, and sounded most like that of the Hermit-Thrush, the only one of the smaller Thrushes which was present at the time in any numbers.

"The call-note of the Hermit-Thrush is very different from that of any other species of its group which occurs with us. It is a low *chuck*, suggestive of the note of a distant Blackbird. The Hermit-Thrush possesses the singular habit of demurely raising its tail and allowing it to fall back slowly to its natural position; this strange movement recurs at intervals and often follows the act of perching. Does it bear any relation to the characteristic caudal activity of the Water-Thrushes and some of the Warblers?"

Dr. Hatch, in his 'Birds of Minnesota,' observes:—"My earliest personal observation of the time of its arrival in the vicinity of where I reside was April 5, 1875. This is a little earlier than any which has been reported to me. Other observers corroborate my own records in making the general data from the 15th to the 20th of April. It seldom sings immediately after its arrival, but in due time those which remain to build nests overflow with the ebullition of fervid melodies. I have often listened to the delicious notes, which to my ear are in no way inferior to those of the Wood-Thrush. I am not surprised that those who have heard him for the first time should be ready to exalt him higher than the other in the scale of song, when I remember the associations amid which they were found. The silence, the delicious solitude of this choristry underneath the shadows of the grand, leaf-canopied forest, awaken feelings, sentiments, and inspirations, eminently calculated to lend enchantment to his liquid, silvery, bell-toned notes, which as they cease are

instantly repeated by another, responding from the uncertain shadows in the distances beyond. His beautiful *crescendo*, begun so low and soft as to seem far away, and swelling upward progressively and evenly into its rounded sweetness and fullness, till he seems to be near enough to touch, yet all the time unseen, may well secure an appreciation of his powers to one for comparisons. This characteristic is a keynote to his identity while yet undiscovered, as the song of the Wood-Thrush is diametrically opposite in being equally perfect *diminuendo*."

The nesting of the species is thus described by Dr. Brewer in the 'History of North American Birds':—"The nest of this Thrush is always built on the ground, most generally either under low bushes or in the open ground, rarely, if ever, among thick trees, and for the most part in low swampy places. Both nest and eggs closely resemble those of Wilson's Thrush (*T. fuscescens*). In Parsboro', Nova Scotia, I found one of the nests built in the very midst of the village, close to a dwelling, though on a spot so marshy as to be unapproachable. The nests are 3 inches in height and 5 in diameter, with a cavity $3\frac{1}{4}$ inches wide by $1\frac{3}{4}$ deep. They are composed of decayed deciduous leaves, remnants of dried plants, sedges, and grasses, intermingled with twigs, and lined with finer grasses, sedges, and strips of bark. The eggs are of a uniform bluish-green colour, and range in length from ·88 to ·94, with an average of ·63 of an inch." Mr. Brewster states that near Winchendon, Mass., he found the species abundant in summer, haunting by preference dry, rather than open, white-pine woods (Auk, v. p. 389). That the species occasionally varies its habit of nesting on the ground is evident from a note of Mr. Batchelder's, as he found a nest at Grand Falls on May 30 in a small fir-tree, about three feet from the ground. In Northern Elk Co., Pennsylvania, Mr. Baily has found nests on mossy banks by the side of the road. Dr. Merrill, in his "Notes from Maine" (Bull. Nutt. Orn. Club, vii. p. 190), writes:—"Their eggs are usually taken in June, but I find among my notes the record of a set taken August, 1873, at Dedham, Maine, the eggs being but slightly incubated. This would seem to be presumptive evidence for the belief that these birds raise two broods in a season."

The following note is from Dr. Coues's 'Birds of the Colorado Valley':—"How quietly and with what solicitude for privacy the nesting of the Hermit-Thrush is accomplished! Such care is taken to conceal its nest in the recesses of tangled undergrowth that few are the ornithologists who have found it. If Wilson, Nuttall, or Audubon ever saw a nest, no one of them recognized its owner. The nests and eggs which they describe as those of the Hermit were certainly those of the Olive-backed Thrush, the only one which nests at any considerable distance from the ground and lays spotted eggs. And unless the Hermit has changed its choice of a summer home since Wilson and Audubon thought they had discovered its nest, it never bred in the southerly regions where they thought it did. But their mistake was not unnatural, since, singularly enough, neither of these ornithologists knew the difference between the Olive-backed and the Hermit Thrush—a distinction erroneously said by Dr. Brewer to have been first suggested by Professor Baird in 1844, as Swainson had discriminated the two with perfect accuracy, though under wrong names, in 1831. The manner in which the nest of the Hermit-Thrush is built, its situation, and the eggs are all so similar to the Veery's that one must detect the shy parents themselves before being sure which has been found. The nest is built on the ground or near it, generally in some low, secluded spot; no mud is used in its composition, the whole fabric being a rather rude and inartistic matting of withered leaves, weed-stalks, bark-strips, and grasses—the coarser and stiffer substances outside, the finer fibres within. The cup is small in comparison with the whole size, owing to the thickness of the walls and of the base. The eggs are like those of the Robin or Wood-Thrush, in their uniform greenish-blue colour, but smaller, measuring about nine-tenths of an inch in length by five-eighths in breadth; being thus not distinguishable from those of the Veery. I have never known of an instance, to my recollection, of the eggs being spotted;

but so many birds which usually lay whole-coloured bluish eggs occasionally drop a set which are somewhat speckled, that I should not be surprised to find at any time a Hermit-Thrush's egg showing a few specks about the larger end."

Adult male in summer plumage. General colour above dull reddish-brown, with a greyish shade; the upper tail-coverts and tail dull rufous, contrasting with the back, the aspect of the tail being decidedly chestnut; wing-coverts like the back, the greater series a little more ruddy on the edges; primary-coverts dusky brown, with rusty margins not reaching quite to the tips; quills dusky brown, with rusty margins, paler and more conspicuous on the primaries; crown of head scarcely any darker than the mantle; lores and eyelid buffy white; feathers below the eye and ear-coverts dusky brown, with narrow buff shaft-lines; cheeks buff, with small dusky cross markings; sides of neck like the back, but mottled with small buff spots; a distinct malar line of black, forming a moustache; under surface of body dull white, the throat and chest pale ochreous-buff, spotted on the sides and centre with distinct triangular spots of brownish-black, very large and pronounced on the chest; the breast rather greyer and mottled with more indistinct spots of dusky brown; the abdomen and under tail-coverts white; sides of body, flanks, and thighs dark ashy grey with a faint tinge of brown; axillaries fulvous, dusky internally, and inclining to orange-buff at the ends; wing-coverts buffy-white, the lower ones dark brown, forming a patch, which contrasts with the orange-buff basal band across the base of the quills. Total length 6·7 inches, culmen 0·6, wing 3·9, tail 2·8, tarsus 1·2.

Adult female. Similar to the male. Total length 6·4 inches, culmen 0·65, wing 3·5, tail 2·55, tarsus 1·05.

Adult in winter. More decidedly rufous than in summer on the upper parts, the wings and tail also deeper and more chestnut; the sides of the face and cheeks, throat and breast more pervaded with buff, as are also the under tail-coverts; the sides of the body incline to ochreous-brown.

Young. Rather more rufous than the adults, and mottled all over with longitudinal spots of ochreous-buff, margined with black; the throat and chest buff, thickly spotted with black, the breast and sides of the body having dusky bars at the ends of the feathers.

The figure in the Plate is drawn from a Pennsylvanian specimen in the Seebohm Collection, and the descriptions have been taken from the series of skins in the British Museum.

[R. B. S.]

TURDUS AONALASCHKÆ, *Gm.*

DWARF THRUSH.

Aoonalaska Thrush, Lath. Gen. Syn. ii. pt. 1, p. 23 (1783).
Unalaska Thrush, Penn. Arctic Zool. ii. p. 338 (1785).
Turdus aonalashkæ, Gm. Syst. Nat. i. p. 808 (1788); Seebohm, Cat. Birds Brit. Mus. v. p. 200 (1881); Ridgw. Man. N. Amer. B. p. 576 (1896).
Muscicapa guttata, Pallas, Zoogr. Rosso-Asiat. i. p. 465 (1811).
Turdus nanus, pt. (nec Audub.), Baird, Cass., & Lawr. B. N. Amer. p. 213 (1858).
Turdus (*Hylocichla*) *nanus*, Coues, Proc. Philad. Acad. xviii. p. 65 (1860).
Hylocichla nana (nec Audub.), Coues, Ibis, 1865, p. 163.
Turdus pallasi, var. *nanus* (nec Audub.), Coues, Key N. Amer. B. p. 72 (1872).
Turdus pallasi, b. *nanus*, Coues, B. North-West, p. 3 (1874).
Turdus (*Hylocichla*) *pallasi*, b. *nanus*, Coues, B. Colorado Vall. p. 21 (1878).
Turdus guttatus, Ridgway, Orn. 40th Par. p. 393 (1875); Belding, Proc. U.S. Nat. Mus. i. p. 396 (1879).
Turdus nanus (nec Audub.), Cooper, Proc. U.S. Nat. Mus. ii. p. 245 (1880).
Hylocichla unalashkæ, Ridgway, Proc. U.S. Nat. Mus. iii. p. 166 (1880).
Turdus aoonalascensis, Nelson, Nat. Hist. Coll. Alaska, p. 218 (1887).

T. minor: remige secundo quintum haud æquante: supracaudalibus et rectricibus rufis, minimè dorso concoloribus, his saturatioribus ferè castaneo-brunneis: hypochondriis cinerascentibus: subalaribus et axillaribus fuscis, grisescentibus, his ad basin albidis.

By general opinion, the Unalaska Thrush of Pennant is admitted to be one of the small species of North America, and although the description is unsatisfactory and apparently based on a young bird, the name of *T. aonalaschkæ* of Gmelin, founded on Pennant's description, has been now adopted by American ornithologists, and it is therefore better to follow their conclusions than to reject the name.

This Dwarf Thrush is the western form of the three races or sub-species which inhabit North America, and are distinguished by the form of the wing, the second quill being shorter than the fifth (*cf.* Ridgway, Man. *l. s. c.*).

The range of the Dwarf Thrush is given by Mr. Ridgway as follows:—"Pacific coast of North America, breeding from the mountains of California north to Kodiak; south, in winter, to Lower California and Western Mexico as far as Colima; during migrations to Nevada, Arizona, Colorado (Denver), Western Texas, &c."

Mr. Nelson (Nat. Hist. Coll. Alaska, p. 218) writes:—"Specimens of this bird are in the U.S. National Museum Collection from various points along the timbered coast of South-eastern Alaska, including Cook's Inlet, Sitka, Kodiak, and Chugatchik Bay. It breeds in this part of the Territory, but appears to be limited to the mild climate and wooded shores of this region, as there are no records of its occurrence beyond to the north and west." In the above-named localities Prof. F. H. Bean found the species not uncommon in July (Proc. U.S. Nat. Mus. v. p. 145). It breeds in British Columbia, as Mr. Rhoads found the species nesting at Field in the Rocky Mountains (Auk, x. p. 24).

Specimens from Oregon are in the Henshaw Collection, from Des Chutes River and Crooked River, procured in September. Dr. Merrill noticed the species at Fort Klamath in April, when it was migrating northward.

A large series of Californian specimens is in the Salvin-Godman Collection in the British Museum, mostly from the Henshaw Collection, the exact localities being as follows:—Mount Whitney (Oct.), San Francisco (Sept. 4), Santa Clara, Nicasio (Jan., Nov.), Los Alamos (Nov. 2), Oakland (Nov.–March), Ballina, San Diego Co. (Jan.–March), San Bernardino (Nov.–Jan.), Monterey (Oct. 6), Greenwood, Eldorado Co. Mr. Townsend says that the species breeds on Mount Shasta, from 300 to 4000 feet (Proc. U S. Nat. Mus. x. p. 237). Mr. Belding says that it is probably a constant resident at Stockton in Central California (San Joaquin Co., lat. 38°); it is common in winter and has been seen as late as the 8th of June. It was abundant at Murphy's in Calaveras Co. (lat. 38° 7′) in winter, leaving in April. It seems to be very rare in the sierras in summer, as it was not noticed at Big Trees, in the pine-region, though two or three were observed at Soda Springs, in the upper pine-region, in September (Proc. U.S. Nat. Mus. i. p. 396). Dr. Cooper records it from Camp Mojave (lat. 35°), leaving about the 1st of April. At Saticoy (lat. 34° 27′) it arrived on the 5th of November, and at Heywood (lat. 37°) it arrived on the 12th of October, leaving on the 1st of May (Proc. U.S. Nat. Mus. ii. p. 245). In the account of the Death Valley Expedition, Dr. A. K. Fisher writes:—"The Dwarf Thrush was only seen during migration. Several were seen in Johnson Cañon, in the Panamint Range, California, where a specimen was secured on the 28th of March. In the Argus Range it was not uncommon in Shepherd Cañon in the last week of April, and at Maturango Spring one was secured on the 8th of May. Mr. Dutcher shot another at Big Cottonwood Meadows on September 11, which was probably a migrant, as the summer resident was *T. auduboni*. Mr. Bailey found the Dwarf Thrush common at Monterey on the 1st of October, and Mr. Nelson observed it abundantly in the vicinity of San Luis Obispo on the last of that month, and along the route from San Simeon to Carpenteria and Santa Paula in November and December" (N. Amer. Fauna, no. 7, p. 145).

The Dwarf Thrush winters in Lower California, where it was found by Xantus at Cape St. Lucas (Ridgway, Proc. U.S. Nat. Mus. iii. p. 533). From Colorado it is recorded by Mr. Sprague, a specimen having been shot "at Magnolia, a small mining town some eight miles west of Boulder, this being the first record for the State." In Arizona the species has been obtained from near Tuczon in April by Mr. Brewster (Bull. Nutt. Orn. Club, vii. p. 67). Mr. Scott says that it is a common winter resident in the Cataline region of Arizona, at an altitude of 4500 feet; it was observed from October 27th to March 14th. Mr. Henshaw has obtained specimens in the Santa Fé Mountains in New Mexico in October, but he says that it is rare there and only a few were noticed in autumn (Auk, ii. p. 330). In the south-western part of the State Mr. Anthony found a few in the hills till late in May (Auk, ix. p. 369). Mr. N. C. Brown records the species from Leon Springs in S.W. Texas in March (Bull. Nutt. Orn. Club, vii. p. 34); and Mr. Lloyd writes (Auk, iv. p. 298):—"It is a tolerably common fall migrant in Western Texas, noticed from September 20 to October 10—occurring at least to Fort Stockton, crossing the plains." At San Antonio Mr. Attwater found it to be a tolerably common migrant, and it was observed from February to April (Auk, ix. p. 344).

The following notes on *T. aonalaschkæ* are taken from Baird, Brewer, and Ridgway's 'History of North American Birds':—

"Dr. Cooper, in his 'Report on the Birds of California,' describes it as shy and timid, preferring dark and shady thickets, feeding chiefly on the ground, running rapidly, and searching for insects among the leaves.

"Near San Diego they began to sing about the 25th of April. The song, consisting of a few low ringing notes, resembles that of Wilson's Thrush (*T. fuscescens*) and also that of *T. ustulatus*, but

is not so loud. Their note of alarm is a loud and ringing chirp, repeated and answered by others at a long distance.

"At Santa Cruz, on the 1st of June, Dr. Cooper met with several of their nests, which, though probably erroneously, he supposed to belong to the Dwarf Hermit-Thrush. They were all built in thickets under the shade of cottonwood-trees. Each nest was about five feet from the ground, and all contained eggs, from two to four in number, in differing stages of incubation. The nests were built of dry leaves, roots, fibres, grasses, and bark, without any mud, and were lined with decayed leaves. Their height and external diameter measured 4 inches. The diameter of the cavity was $2\frac{1}{2}$ inches and the depth $2\frac{1}{4}$. The eggs measured ·90 by ·70 of an inch. They are of a pale bluish-green, speckled with cinnamon-brown, chiefly at the larger end.

"The nest, supposed to be of this species, supplied by Dr. Cooper, is large for the bird; constructed of a base loosely made up of mosses, lichens, and coarse fibres of plants. It is a strong and compact structure of matted leaves, put together when in a moist and decaying condition; with these there are interwoven roots, twigs, and strong fibres, surrounding the nest with a stout band and strengthening the rim. In fact, it corresponds so well—as do the eggs also—with those of *T. ustulatus*, that it is extremely probable that they really belong to that species. The only observable difference is the absence of the *Hypnum* mosses characteristic of the northern *T. ustulatus*. The fact that this Thrush builds its nest above the ground and lays spotted eggs, if verified, would at once warrant our giving it independent rank as a species, instead of considering it as a local race of *T. pallasi*."

Turdus aonalaschkæ is a small form of *T. pallasi*, with a slenderer bill. It is also of a darker reddish-brown colour above, and the upper tail-coverts and tail are ferruginous-brown, not very different in tint from the tail of *T. pallasi*. It is darker than that species on the sides of the body, which are deep ashy-grey or mouse-brown. The under wing-coverts, however, are much darker than in *T. pallasi*, and are nearly uniform ashy-brown like the axillaries and flanks; the axillaries are white near the base. The spotting on the throat is larger than in *T. pallasi*, and frequently clouds the whole throat and chest, while the spots on the breast are larger and much more pronounced.

The adult male measures:—Total length 6·3 inches, culmen 0·6, wing 3·5, tail 2·65, tarsus 1·2. The adult female measures:—Total length 6·1 inches, wing 3·6. "Bill dark brown, yellowish at base of lower mandible; feet pale brownish; iris brown" (*W. Brewster*).

Mr. Seebohm did not figure this race. [R. B. S.]

TURDUS AUDUBONI, *Baird.*

AUDUBON'S THRUSH.

Merula silens (nec Vieill.), Swains. Phil. Mag. 1827, p. 369.
Turdus silens (nec Vieill.), Gray, Gen. B. i. p. 219 (1847).
Turdus solitarius (nec Wilson), Scl. P. Z. S. 1857, p. 212.
Turdus auduboni, Baird, Review N. Amer. B. p. 16 (1864); Seebohm, Cat. Birds Brit. Mus. v. p. 198 (1881).
Turdus pallasii, var. *audubonii*, Coues, Key N. Amer. B. p. 72 (1872).
Turdus pallasi (nec Cab.), Scl. & Salv. Nomencl. Av. Neotr. p. 1 (1873).
Turdus pallasi, c. *audubonii*, Coues, B. N.-West, p. 3 (1874).
Turdus guttatus, β. *auduboni*, Ridgw. Orn. 40th Par. p. 394 (1877).
Turdus (*Hylocichla*) *pallasi*, c. *auduboni*, Coues, B. Color. Vall. p. 21 (1878).
Turdus aonalaschkæ auduboni, Ridgw. Proc. U.S. Nat. Mus. iii. p. 1 (1880); A. O. U. Check-list N. Amer. B. 2nd ed. p. 319 (1895).
Hylocichla unalaschkæ auduboni, Ridgw. Proc. U.S. Nat. Mus. iii. p. 166 (1880).
Turdus pallasi auduboni, Allen & Brewster, Bull. Nutt. Orn. Club, viii. p. 152 (1883).
Turdus sequoiensis, Belding, Proc. Calif. Acad. Sci. (2) ii. p. 79 (1889).

T. similis *T. aonalaschkæ*, sed paullo major et magis olivascenti-brunneus: subalaribus, ut in *T. pallasi*, pallidis: axillaribus cinerascentibus, hypochondriis concoloribus: caudâ saturatiorè brunneâ, vix castaneâ.

Audubon's Thrush is intermediate in colour between *T. aonalaschkæ* and *T. pallasi*, and has an intermediate geographical range. Mr. Ridgway (Man. 2nd ed. p. 576) gives its distribution as follows:—Rocky Mountains from the northern border of the United States south to the highlands of Mexico and Guatemala.

In Montana, which appears to be the most northern breeding limit of the species, Mr. Williams says that *T. auduboni* is much the rarest Thrush, nesting from 4000 to 6000 feet (Auk, vii. p. 292). Messrs. Richmond and Knowlton obtained an adult bird on the 11th of September at 8500 feet, and a young one in nestling plumage at Mystic Lake on the 27th of July (Auk, xi. p. 308). In South Central Idaho, Dr. C. Hart Merriam says that it was not found common anywhere. A few were seen in the spruce-forests of the Salmon River Mountains in August, and in the large cañon of Snake River on the 9th of October (N. Amer. Fauna, no. 5, p. 108).

A specimen from Fort Bridger, Wyoming, obtained by Mr. Drexler on the 6th of May, 1858, is in the Henshaw Collection. In Colorado, Mr. Minot found the species abundant at Boulder on the 31st of May (Bull. Nutt. Orn. Club, v. p. 224). At Pueblo Mr. Beckham noticed it from the 5th to the 13th of October, but saw it at no other time (Auk, iv. p. 124). In San Juan County Mr. Drew says that it was common and breeds in June, but was not noticed after the 13th of September (Bull. Nutt. Orn. Club, vi. p. 86). The same author states that it breeds in Colorado from 5000 feet to 11,500 feet (Auk, ii. p. 15). On the Wet Mountains, in the same State, Mr. Lowe says that it is tolerably common, nesting up to 10,000 feet (Auk, xi. p. 270).

In Arizona Mr. Scott found it not common, but he believed it to be the resident form,

although he only obtained specimens in April (Auk, v. p. 167). That this is the case has been proved by Mr. Mearns, who found this Thrush to be an abundant summer species in the Arizona Mountains, nesting late in May and in June (Auk, vii. p. 263). The Henshaw Collection contains a series of specimens from Mount Graham procured in July and September. Mr. Henshaw records the present species as a plentiful summer resident in New Mexico, and found young out of the nest on the 18th of July (Auk, ii. p. 330).

Mr. Townsend states that it was noticed by him in Northern California up to 4000 feet in summer, but was not found to be nesting (Proc. U.S. Nat. Mus. x. p. 237). Mr. Jeffries records it from Santa Barbara on the 2nd of April (Auk, vi. p. 223). Dr. A. K. Fisher, in his account of the Birds of the Death Valley Expedition, writes as follows (N. Amer. Fauna, no. 7, p. 146):—"A race of the Dwarf Thrush, named *Turdus sequoiensis* by Mr. Belding, but which the 'Committee of Nomenclature' of the American Ornithologists' Union decided not to be different from *Turdus auduboni* of the Rocky Mountain region, is a summer resident in the Sierra Nevada, and probably in some of the desert ranges, though this is not certain, as specimens were not taken in the latter in summer. This applies to the records of individuals seen at Willow Creek in the Paramint Mountains, during the latter part of May, and on the east side of Wancoba Peak in the Inyo Mountains in June. In the Sierra Nevada Mr. Dutcher found the species common in the Big Cottonwood Meadows, and Mr. Nelson reported it as abundant at the head of Owens River and on the San Joaquim River. Mr. Stephens heard a Thrush above the Queen Mine in the White Mountains, Nevada, July 11–16; saw the species at Bishop's Creek, August 4–10, and about the Lakes on Independence Creek, June 18–23. Mr. Belding found it in the Yosemite Valley in June." Dr. C. Hart Merriam, in his paper on the birds of the San Francisco Mountain Region, states that Audubon's Thrush "breeds abundantly throughout the Spruce and Douglas Fur zones. Spotted young were shot on the 1st of August" (N. Amer. Faun. no. 3, p. 101).

In his report on the Ornithology of the 40th Parallel, Mr. Ridgway observes (p. 394):—"This Thrush was first met with in the Wahsatch Range, where it inhabited chiefly the deep ravines of the pine-region. The first specimen seen was shot on the 26th of May, in City Creek Cañon, near Salt Lake City; but this was probably a mere straggler from the higher portions of the mountains."

In Western Texas, according to Mr. Lloyd, it is known as a spring migrant, being tolerably common in Tom Green Co., but rare in winter in Concho Co. (Auk, iv. p. 298). At San Antonio Mr. Attwater records it as a migrant, but he adds:—"A few probably winter here, as I have taken them early in February, March, and April" (Auk, ix. p. 344). The range of the species in Central America is well illustrated by the series in the Salvin-Godman Collection from the following localities:—Rio Salado and Topo Chico, Nuevo Leon, March 3 to April 17 (*F. B. Armstrong*); Sierra Madre above Ciudad Vittoria, Tamaulipas, April (*W. B. Richardson*); Yecæra, Sonora, April 4 (*W. Lloyd*); Tutuaca, Sonora, March 4 (*W. Lloyd*); Pinos Altos, Chihuahua, December (*Buchan-Hepburn*); Rio de Jesus Maria, Chihuahua, Dec. 4 (*W. Lloyd*); near the city of Mexico (*H. S. Le Strange*; *White*); Tetelco, Jan., Coajimalpa (Tacubaya), Nov., March, Chimalpa, April 2, Coapa, April 4 (*Ferrari-Perez*); Tenango del Valle, Oct. 14 (*W. B. Richardson*); Real del Monte (Hidalgo), Oct. 17–21 (*W. B. Richardson*); La Parada (*Boucard*); Oaxaca (*Fenochio*); Totontepec, Oaxaca, Feb. (*M. Trujillo*); Popocatapetl, 8000–12,600 feet (*F. D. Godman*); Coatepec (Vera Cruz), Nov. (*M. Trujillo*); Zapotlan, Jalisco, March 29 (*W. Lloyd*); Sierra de Bolaños, Jalisco, Feb. 26 to March 3 (*W. B. Richardson*); Sierra Nevada de Colima, Dec. (*W. B. Richardson*); Rio Frio, Iztaccihuatl, Sept. (*W. B. Richardson*); Volcan de Tacana, Chiapas, March 2–8 (*W. B. Richardson*); San Cristobal, Chiapas, April (*W. B. Richardson*); Volcan de Fuego, Guatemala, Dec. (*O. S.*). The Chiapas specimens would appear to be breeding birds, from the appearance of their plumage.

Messrs. Salvin and Godman (Biol. Centr.-Amer., Aves, i. p. 15) observe that this Thrush is

"a common species on the tablelands, judging from the number of specimens sent home in collections. Prof. Sumichrast mentions it as an inhabitant of the alpine regions, and as common in the pine-woods of the district of Orizaba. He obtained it all seasons at Moyoapam, a locality about 8500 feet above the sea-level (Mem. Bost. Soc. N. H. i. p. 542). Its presence in Guatemala is known from a single specimen obtained in December 1873, in the pine-forests of the Volcan de Fuego, at an elevation of about 11,000 feet above the sea. Whether the species is resident in this tract of forest or not, cannot at present be stated; but it is not improbable that it is to be found there, as near Orizaba, at all seasons. It is also almost sure to be met with in the upland ridges of the Guatemala Altos which stretch north-westwards to the Mexican frontier."

The habits of *T. auduboni* seem to be very similar to those of the allied species. Mr. Ridgway observes:—"In its manner of flight, which is gliding and noiseless, this Thrush greatly resembles Townsend's Solitaire (*Myiadestes townsendi*), the resemblance being increased by the pale ochraceous band across the base of the remiges, which shows as a very conspicuous feature on both birds, when flying. The haunts of this Thrush were so difficult of access from our camp, and its manners so reserved, that we could not learn much regarding its habits, nor did we hear its song."

Mr. Mearns (Auk, vii. p. 263) in his paper on "Arizona Mountain Birds," writes:—"This, the sweetest mountain songster, is an abundant summer resident in fir and spruce forests, breeding late in May and in June. At Quaking Asp Settlement, near the end of May, a pair was engaged in building a nest in my camp. The nest was saddled on to the middle of the lowest limb of a large spruce, and the birds gathered material for its construction close about my tent with perfect freedom from shyness, accepting proffered bits of cotton for its completion. Like the Wood-Thrush, its song is most frequent in the early morning hours and after showers. The form wintering in the Verde Valley is the Dwarf Hermit-Thrush (*Turdus aonalaschkæ*)."

Mr. Williams (Auk, vii. p. 292), writing from Montana, says:—"Audubon's Thrush, according to my observations, is much the rarest, in Montana, of the birds under consideration. It reaches a somewhat higher elevation than the Willow and Olive-backed Thrushes, and I have seen it at least half a mile from streams in dense evergreen timber. The first specimen noted was in the top of a pine sixty or seventy feet high, standing on a projecting knoll of the mountain side some eight hundred or a thousand feet above Belt River. I was first attracted by the song, at that time quite new to me, and shortly discovered and obtained the bird. Their song begins with two (sometimes only one) clear, whistle-like notes of slightly different pitch, followed by the ringing melody peculiar to the songs of the other species, and the whole, though rather too brief, produces a fine effect as it comes floating, clear and distinct, from the silent dark-timbered mountain-sides. They sing at irregular intervals throughout the day, and never seem to collect together in any numbers, certainly manifesting some very hermit-like traits."

T. auduboni is a larger race than either *T. pallasi* or *T. aonalaschkæ*, and is of a darker, somewhat greyer, brown, while the tail is of a dull reddish-brown. The sides of the body are dark ashy or ochraceous-grey, and the under wing-coverts are pale buff or whitish, as in *T. pallasi*; the axillaries are dark ashy, like the flanks, but with white bases.

Adult male. Total length 6·8 inches, culmen 0·65, wing 4·1, tail 2·85, tarsus 1·25.

Adult female. Total length 6·4 inches, wing 3·7.

The figure in the Plate representing this species is drawn from a specimen from La Parada in the Seebohm Collection. [R. B. S.]

TURDUS PILARIS, *Linn.*

FIELDFARE.

La Litorne ou Tourdelle, Briss. Orn. ii. p. 214 (1760).
Turdus pilaris, Linn. Syst. Nat. i. p. 291 (1766); Gould, B. Gt. Br. ii. pl. xxxv. (1864); Sharpe & Dresser, B. Eur. ii. p. 41, pls. ix., x. (1871); Newton, 4th ed. Yarrell's Brit. B. i. p. 272 (1872); Seebohm, Cat. Birds Brit. Mus. v. p. 205 (1881).
La Litorne, Montb. Hist. Nat. Ois. iii. p. 301 (1775)
Alauda calandrotte, P. L. S. Müll. Syst. Nat. Suppl. p. 137 (1776).
Fieldfare, Lath. Gen. Syn. ii. pt. 1, p. 24 (1783).
Sylvia pilaris, Savi, Orn. Tosc. i. p. 209 (1827).
Arceuthornis pilaris, Kaup, Natürl. Syst. p. 93 (1829).
Turdus subpilaris, Brehm, Vög. Deutschl. p. 384 (1831).
Turdus juniperorum, Brehm, Vög. Deutschl. p. 385 (1831).
Merula pilaris, Selby, Brit. Orn. i. p. 161 (1833); Ridgw. Proc. U.S. Nat. Mus, iii. p. 224 (1880).
Turdus fuscilateralis, Brehm, Naumannia, 1855, p. 281.
Planesticus pilaris, Jerd. B. Ind. i. p. 530 (1862).

T. gutture, pectore et corporis lateribus conspicuè nigro maculatis: caudâ nigrâ: axillaribus conspicuè albis.

The Fieldfare is one of the finest Thrushes in the world, and is a bird of the Palæarctic Region. Writing in 1881, Seebohm gives its range as follows:—"Breeds in the birch- and pine-forests of the Palæarctic Region, from the Atlantic to the valley of the Yenesei, occasionally extending its range northwards beyond the limit of forest-growth, and frequenting also, in large colonies, the birch-regions of north temperate Europe. It winters in the British Isles and Southern Europe, occurring very rarely in the Spanish peninsula, but crossing the Mediterranean to Marocco, Algeria, Egypt, and Nubia. In Asia it winters in Turkestan, Cashmere, and N.W. India." During the sixteen years that have elapsed since the above was written, a considerable increase in our knowledge of the range of the Fieldfare has taken place, as will be seen in the summary given below.

Unlike the Redwing, which nests in Iceland, the present species is only a rare visitor to that country, and for many years its occurrence there was doubted by Palæarctic ornithologists; but Mr. H. Benedick Gröndal states that one was obtained alive, though in an exhausted condition, near Reykjavik, on the 6th of December, 1885. It has not been seen in Spitsbergen, but was noticed on Jan Mayen by Dr. Fischer. To the Færoes it is an occasional visitor. In Scandinavia it is everywhere found, and is said by Nilsson to occur in Sweden in summer from the pine-woods of Småland and Blekinge into the Arctic regions, being more common in the north. Sundevall says that it is the commonest Thrush in Sweden, but does not extend quite to Hammerfest, nor does it breed so far south as Skåne. In Norway it breeds everywhere, according to Professor Collett, in the interior of the eastern portion in rather elevated districts and in the birch-region of the fjelds.

Along the west coast it is found right up to the Russian frontier in very large numbers. It is described by Pleske (Uebers. Säug. u. Vögel Kola-Halbinsel, p. 36) as being by no means rare in Russian Lapland. During his journey with W. W. Lawrow, he noticed the species first at Kandalakscha, on the Wolostnaja tundra, near the borders of the sub-alpine and alpine regions. In the central portion of the Kola Peninsula, von Middendorff reports it as common up to 68½° N. lat. Pleske himself found it at Rasnawolok on the 28th of July, 1880, with the young birds still not full-fledged, and again at Masselga station un-fledged young were noticed on the 3rd of August. The Fieldfare is very common in Kola Lappmark, according to Malm, and Böhtlingk noticed it on the small peninsula between the mainland and the Rybatschij Poluostrow (Fischer Peninsula), and Lilljeborg on the Murman coast at Schuretzkaja. In Tornеå-Lappmark, von Wright states that the Fieldfare is somewhat more plentiful than the Mistle-Thrush in those parts of the country he visited. According to Palmén it is very common about Muonioniska, appearing in the parish of Muonio on the 4th of June. Wolley found it breeding in many places in Tornеå-Lappmark and West Bothnia, some account of the nests being given in Dresser's 'Birds of Europe,' from the traveller's original notes lent by Professor Newton. Von Wright has noticed the species at Karesuando, Lagus at Kuusamo, Grape at Enontekis, and according to Malm it is very common at Enare, Utsjoki, and on the shores of the Frozen Sea; he noticed its arrival in the Enare district on the 12th of May. In East Finmark, Schrader and Sommerfeldt both report the Fieldfare as very common in summer, but disappearing in winter. All observers agree that the species is found throughout the pine- and birch-regions up to the level of the eternal snow. It does not breed plentifully at the latter level, but does so in considerable numbers in the birch-regions and pasture-lands (Pleske, *l. c.*).

To Archangel the Fieldfare is a very common summer visitor, according to Henke (Seebohm, Ibis, 1882, p. 276), and it seems to be found plentifully in Northern Russia during the breeding-season. Seebohm observes:—"As you go further north the colonies become smaller; and as the limit of forest-growth is approached beyond the Arctic Circle, the Fieldfare can scarcely be called a gregarious bird. On the tundra, in the absence of birch trees or larches, it breeds on the ground, choosing a niche under the turf on the edge of a cliff, exactly as the Ring-Ouzel so frequently does. In the valley of the Petchora we did not see the Fieldfare north of 68°; it arrived on the 17th of May" (Hist. Brit. B. i. p. 229). It nests near St. Petersburg, and Dr. Bianchi states that he found it breeding plentifully near Utschaki in the Province of Novgorod (Biol. Nat. Uschaki, p. 16). In Dresser's 'Birds of Europe' are the following notes:—"Professor Kessler says that it arrives in Podolia, Volhynia, and Kief in large numbers in October and November, and again in March and April. 'As far as I know, none winter with us at Kief, but a few remain during the summer.' According to Professor Bogdanoff, it is very common in the Governments of Simbirsk and Kazan. It arrives at Kazan about the same time as the Mistle-Thrush, at the end of March or early in April. It nests on the edge of the forests, in bushes and near groves of non-evergreen and conifer trees, as also in the woods of the valley of the Volga, as far as Samarskaia Lake. Often several pairs inhabit a grove, building their nests a short distance from each other. They leave later than the other Thrushes, about the latter half of October (old style), and even stay till the early part of November, when the ground is covered with snow, should the mountain-ash berries be plentiful" (B. Eur. ii. p. 30).

It has not been found nesting in Uman by Goebel. In Poland, Taczanowski says that the Fieldfare is very common and nests there.

In the early part of the century the species was found breeding in Livonia and Esthonia, and in Eastern Prussia Mr. Hartert says that it nests both singly and in colonies (Ibis, 1892, p. 358). He also tells me (*in epist.*) that he has found it breeding in the county of Glatz in Silesia.

Major A. von Homeyer (Mitth. orn. Ver. Wien, 1885, p. 8) has given some interesting notes on the nesting of the Fieldfare in Germany, proving apparently that its breeding-range has become considerably extended during the present century. Mr. Hartert writes to me that he agrees with E. von Homeyer and others in doubting the supposed extension of the breeding-range, but rather thinks that it is somewhat erratic in its habits, often appearing in counties where it had not been before, and again leaving others where it used to breed, but he fails to see that it has really extended its range southwards. Pastor Hintz found it breeding in the Rügenwalde in Pomerania in the year 1820, and Seiffertitz near Herzberg. Wiese found a colony nesting at Loburg, 40 miles west of Magdeburg, and Tobias at Lausitz. L. C. Brehm obtained nestlings in 1826 near Wittenberg on the Elbe, and they are still in his collection. Gloger mentions a colony near Bredan in 1818. Since 1884 the species has been discovered nesting in Bavaria, and the existence of several colonies was recorded by Herr Grashey in the above-named year between Munich and Augsburg. Since 1853 Dr. Liebe states that it has been common in Eastern Thuringia, and Hintz found many nests near Grabon and Stettin. Baron Kotz records the occurrence of the Fieldfare in the Böhmerwald in July at 3000 feet, among the pine-trees. Herr Čapek is the authority for the breeding of the bird in Moravia, nests having been found near Zámrsk to the north of Kelč, at Dohnahl and at Milotic on the Bečwa River.

To the rest of Europe the Fieldfare is principally known as a winter visitant, but, according to Baron De Selys-Longchamps, a few pairs are said to nest in the higher Ardennes, and Schlegel says that a few pairs have also been known to nest near Groningen in Holland. It is also believed to build in the Italian Alps and in Switzerland, but no authentic records are established; but that it breeds in the Pyrenees has not only been asserted, but seems very likely to be the case, as Mr. H. M. Wallis observed a Fieldfare at 5700 feet above Gavarine, in the Central Pyrenees, on the 6th of July.

The migrations of the Fieldfare vary in extent with the severity of the seasons in the north. Although they all seem to quit their extreme northern breeding-places at the approach of winter, many remain in Scandinavia during the latter period of the year, descending to the lower grounds and feeding on berries. Thus the birds are much less common in Great Britain in mild winters than when the weather is severe in the north of Europe; and the Fieldfare is the last of the Thrushes to arrive on our shores, as it also is the last to succumb to the severity of a hard winter. It is found everywhere in Great Britain during the cold weather, arriving generally in October and December; but it has also been seen occasionally in September, and it has been observed as late as May. As to the nesting of the bird in Scotland and other parts of Great Britain, there is as yet no authentic evidence of the fact. There is no reason why the bird should not nest in the pine-woods of the north, just as it does in Norway, but, so far, every nest sent to me to the British Museum from Scotland as that of the Fieldfare has turned out to be that of the Mistle-Thrush.

The winter range of the present species extends to the Mediterranean countries, to Spain, Portugal, Algeria, Marocco, and the Canaries, and it also occurs in Italy, Greece, Cyprus, Palestine, and Egypt at this season of the year, as well as in Southern Russia, Asia Minor, and the Caucasus.

In Siberia the Fieldfare ranges as far as the Yenesei Valley in the breeding-season, and has been met with by Dybowski and Godlewski in Dauria and in the southern part of Lake Baikal, but only in spring, and it is not seen on the autumn migration. It has been found nesting on the Wiloni River by Mr. Paulowski (Tacz. Faun. Orn. Sibir. i. p. 289). On the Yenesei, Seebohm found a nest in 69° N. lat. and noticed it as high as $70\frac{1}{2}°$. Mr. H. L. Popham says that it is the commonest of all the forest-birds on the Yenesei, colonies of several hundreds inhabiting the willows on nearly all the islands (Ibis, 1897, p. 91).

It is a winter visitor to Turkestan and Central Asia. Russow met with it at Tschinas (Pleske, Mém. Acad. Imp. Pétersb. (7) xxxvi. p. 7), and the brothers Grum-Grzimailo at Morgol and Schao-Wan (id. Mél. Biol. xiii. p. 292). Przevalski procured specimens on the Saissan River and in Western Zaidam in December, and at Saissansk in March (Pleske, Wissensch. Result. Przev. Zool. ii. Vög. p. 6).

According to Jerdon the Fieldfare has once been procured at Simla in the North-western Himalayas, and a specimen said to be from Saharunpur, formerly in the India Museum, is now in the British Museum. Dr. Leith Adams says that the species was common in the oak- and pine-forests of Cashmere; but I think there must have been some mistake in the identification, as no other collector has met with the Fieldfare in Cashmere, nor was it noticed by Colonel Biddulph nor by Dr. Scully at Gilgit.

In its breeding-haunts in Scandinavia the Fieldfare is a bird of every-day observation, and its presence is easily discovered by the harsh alarm-note which the bird utters when its domain is intruded upon. I have found the nest in all kinds of places in Norway, the birds generally building in colonies in the lower valleys, especially in the small clumps of birch-trees which form spinneys near some of the farms; but on the higher grounds, in the birch-forests which clothe the mountains up to the tree-limit, the colonies are very small and generally consist of four or five pairs within a small area of wood, while still more often a solitary couple take up their abode and build their nest without any companions near. On the fjelds, before the saeters are occupied for the summer by the cows and the dairy-maids, the Fieldfares have the land to themselves, and build in the most exposed and often absurd situations. Where a solitary pine-tree stands in a birch-wood, it is almost certain to be selected by a pair of Fieldfares as a nesting-home, and this is especially the case in the higher birch-woods not far below the snow-line. I have more than once been surprised to find an isolated pair of Fieldfares nesting at a quite unexpected height in the mountains without any other sign of bird-life near; but, then, to a creature of such strong flight a few hundred feet on a mountain side mean nothing, and one may often see a Fieldfare crossing high in the air, from one side of a valley to the other. No nest is easier to find than that of the present species, for even if it be a little way off the path and liable to escape detection, the angry alarm-notes of the parent birds are sure to indicate its vicinity; and when there is a colony, the noise they make is quite remarkable, as they utter their harsh notes of expostulation at the intruder, who, however, if he be an English ornithologist, will be enjoying, perhaps for the first time in his life, an opportunity of studying this fine bird at close quarters. Nothing could have been more interesting than my first acquaintance with the Fieldfare in its nesting-haunts in Norway. A thick mist had enveloped our party as we approached the farm-house on the mountains where we were to spend the night, arriving there six hours behind our appointed time and finding all the family in bed. The bustle of unpacking our luggage and stabling the ponies woke to life the House-Martins, Pied Flycatchers, and other inhabitants of the homestead; but the noise of our arrival seemed to be resented most by the Fieldfares, who lived in a small wood behind the farm-house, and through the rest of the night, whenever I awoke, I could hear the "chuck" or the harsh challenge so familar to our ears in winter, uttered by the birds in the adjoining trees. These cries became more intense when the sun rose, and a few of the birds commenced to sing a few notes, of no great beauty or variety, and sufficient to prove that the Fieldfare is not much of a songster. While breakfast was being got ready, I wandered into the little birch-grove, and was immediately the centre of attraction to the whole colony of Fieldfares. Nests were in every other tree, and all contained eggs, no doubt by this time (June 13th) highly incubated, but no young birds. In the centre of the wood was a solitary dead pine, on whose naked arms the Fieldfares perched, peering down at me in every attitude of conceivable grace, and I never saw anything which pleased me more than this my first experience

of *Turdus pilaris* in its native home. This was the largest colony of the birds I have ever met with, and on the fjelds five or six pairs nesting in close proximity are as much as I have ever noticed, while isolated nests are not uncommon. Some of these are placed in absurdly open positions. I have seen one nest close to a house in a small birch, and another on the top of a fence close to a path, in direct view of everyone leaving the house, both being built so low down that anyone could look into the nests. They must inevitably have been discovered by us, even if the clamour of the parent birds had not at once revealed their position. Another nest was placed on the open window-sill of an unoccupied saeter in full view of anyone approaching the house, but was left unmolested when the latter became inhabited for the summer, and the young birds were duly reared. On another occasion I found a nest in a small birch-tree standing by itself on the side of the road, and the mother bird, drenched to the skin, as we were ourselves, was squatting on the nest and protecting her young from the rain, her wings being outstretched over each side of the nest. When the young are hatched, the birds are quieter and less demonstrative, as if afraid of drawing attention to their progeny, and the parents may then be seen searching for food by the side of the water and flying off with it to the nest in the quietest and most unobtrusive manner.

The following account is taken from Seebohm's 'History of British Birds':—"The Fieldfare's haunts in Britain are varied ones. A thorough wanderer, it is seen almost everywhere; either passing over on its journeyings from place to place, or stationary as long as its food is to be obtained. It prefers the isolated woods and pastures to shrubberies, although in severe weather it is often seen amongst evergreens, in company with the Redwing. These birds also frequent the well-cultivated districts, seeking their food on the tall hedges; and occasionally a few stragglers come quite close to the houses to feed on the hawthorns in the gardens. As long as the weather keeps open, the Fieldfares seem to shun man's presence almost entirely; but the first severe fall of snow, the first sharp frost, brings them 'in' in great numbers.

"The first visit to the breeding-place of the Fieldfare is an event in the life of an ornithologist never to be forgotten. As you drive along the excellent Norwegian roads in the carioles or light gigs of the country, through the pine-forests or by the side of the cultivated land near the villages, there is little in the bird-life to remind you that you are not in one of the mountainous districts of England. As you approach the Dovrefjeld, however, the ground rises, the pines become smaller, and the hill-sides are sprinkled over with birch trees. Now is the time to look out for the Fieldfare. Presently the long watched-for *tsak*, *tsak* is heard. You tie your horse to the nearest tree, climb the hill-side whence the sound came, and presently find yourself in a colony of Fieldfares. The birds make a great uproar as you invade their domain, but soon escape beyond gunshot, and their distant *tsak*, *tsak* is the only sound you can hear. Your natural impulse is to ascend the first tree where you can see a nest, which is almost sure to be placed in the fork of a birch against the trunk and the first large branch. Close by are sure to be many more nests, some built on the flat horizontal branch of a pine; and outlying nests belonging to the colony will be found for some distance all round.

"The Fieldfare arrives on our shore a little later than the Redwing—in the last week of October, or, perhaps more frequently, in the beginning of November. It is, however, a difficult thing to give the exact date of this bird's appearance; for its wandering mode of life in this country baffles precise observation, and renders a record of the exact date of its arrival almost an impossibility. Like the other members of this group of birds, the Fieldfare migrates for the most part at night, and usually at a considerable height.

"When the first heavy fall of snow is lying on the ground, a walk abroad will probably cause you to make the acquaintance of the Fieldfare. There is something about the first heavy fall of snow peculiarly attractive and interesting to the naturalist—in fact to all who take a delight in rural scenes. The whole landscape then bears a strange novel look; it is something fresh; and, what is more, bird-

life in the snow is an interesting study. If you stroll out into the woods on a wintry morning, before the first freshness of the snow-storm has passed away, a dreamy quietness seems to be everywhere; animals that betrayed their presence amongst the autumn leaves when the ground was bare, now steal silently away, and every thing seems changed by the sudden transformation of a night. The broad-leafed laurels and the dense yews and hollies bend under their heavy pall of dazzling whiteness. Here and there on the trunks of the forest-trees the snow has lodged in the rifts of the bark, and each branch and twig of the hedgerows is clothed in a fair frost-work of silver filagree, whilst overhead the network of branches comes indistinctly out against the leaden sky above. Animals are now betrayed by their tracks upon the snow. Here a hare has crossed, and, doubling, has passed over the turnips, and found her 'seat' in some warm hedgerow. There a weasel has come from the stone-heap, and, in irregular march, has entered the shrubbery. The Blackbird has hopped out onto the snowy lawn, in vain search for a scanty sustenance; and on an old stump a Robin has perched to warble his morning song. The 'spoor' of each is now made plain—the tell-tale snow reveals them all. But if you want to see the Fieldfares you must not look for them on the ground, but in the hawthorn trees. Long before you approach them they probably take wing in a straggling train, scattering the snow in showers from the twigs, and their harsh notes of *tsak*, *tsik*, *tsak* ring clearly out on the bracing frosty air. From tree to tree they fly before you, always keeping out of gunshot, or, if thoroughly alarmed, mounting into the air, and, in a widely scattered flock, taking themselves off to a distance, their dark forms appearing large against the sky as they quickly pass away. The flight of the Fieldfare is not particularly rapid, but is straight forward, and with but little undulation, and is performed by a series of quick flapping movements. Sometimes the birds will go through a number of graceful evolutions in the air before alighting on a favourite pasture. When alarmed, they fly to the nearest tree-tops, where they sometimes join in a melodious concert, like Redwings, although just as frequently they will fly straight away. But the Fieldfare is far the oftenest seen in the branches. Like the Mistle-Thrush, with whom they often associate, they haunt the berry-bearing trees and shrubs; and as soon as the stock of food is exhausted in one locality they commence their nomad life again, and are off in search of more suitable pastures. At nightfall the Fieldfare is found in the shrubberies and near the evergreen trees and bushes, where it retires to roost. Like the Redwing and the Blackbird, the Fieldfare becomes vociferous at the approach of dusk, and its peculiar chattering cry and low guttural call-notes are heard well into twilight. It has been said that the Fieldfare roosts upon the ground; but this is undoubtedly from necessity, not from choice; for the bird, though, like all other Thrushes, for the most part a ground feeder, has none of the characteristics of ground-birds, as the Larks and Pipits, and where evergreens are at hand it always avails itself of their shelter. Instances are alleged of these birds having been flushed from the stubbles or the pastures at dusk; but this is the Fieldfare's feeding-hour; and if shrubberies be near at hand, it is there they spend the night.

"The Fieldfare is less exclusively insectivorous than the Redwing. In winter these birds are sometimes found upon the stubbles and wilder pastures (places the Lark loves to frequent), where they consume the scattered grain, and pick out the seeds of the various grasses. But they also search at times the marshy meadows and pasture-lands for snails, worms, and beetles; and if the frost lasts long and vegetable food is hard to find, they will haunt the banks of the running streams for the sake of the scanty insect-fare they afford. In winter the Fieldfare seems most at home amongst the branches of berry-bearing trees and shrubs. He is then a thorough berry feeder, and all the winter fruits form his fare. He is often seen in the mountain-ash, or in amongst the dense thickets of wild rose and bramble, where the 'hips' grow the thickest; but the food he loves best appears to be the berries of the hawthorn. It is a pleasing sight to see a flock of Fieldfares, when the ground lies inches deep in snow, in the dense branches of these trees, obtaining the berries

which hang in such tempting clusters from almost every twig. It is difficult to say when these trees look best—in the spring, when they look almost as white as the driven snow, and their delicate foliage shines like emeralds, or in the winter, when their rich red fruit sets off the leafless branches. Under the trees the berries lie in all directions, for the birds drop or knock off almost as many as they eat; and the stones are ever falling as they are dexterously shelled out by the feeding birds above. The Fieldfare's summer food consists of insects, worms, caterpillars, and grubs, and, on its arrival at its breeding-grounds in high latitudes, of the various moorland berries that are preserved by the snows of winter.

"Although the Fieldfare warbles occasionally during its winter sojourn amongst us, still its love-song is only heard amongst the wild scenery of its northern haunts. About the end of April or the first week in May the Fieldfare quits the British shores for the north; and upon its arrival its love-song commences. This bird is not a free singer at all; and his song is for the most part confined to the pairing-season. It is often commenced when the bird is on the wing—a wild desultory warble, which he often supplements on his perch by notes reminding one of the peculiar chatter of the Starling. From all parts of the forest the birds are heard to sing; and their wild carols break the stillness of the daily lessening arctic twilight. By many persons the Fieldfare is thought to be a songless bird; others speak but poorly of his musical attainments. But the former have evidently missed the season of the bird's melody; and the others have possibly been too much accustomed to more ambitious songsters to do justice to his simple strains. The Fieldfare's love-song is a pleasant addition to the thousands of songsters that make the Arctic summer so gay and lively. The call or alarm-note of the Fieldfare is a sharp chattering cry—a kind of laughing cackle—several times repeated, and uttered most frequently during the breeding-season; and in the winter it is often heard to utter a low guttural warble, usually at roosting-time.

"The Fieldfare builds its nest in the branches of the birch, the alder, or the pine at various elevations from the ground. Sometimes, though rarely, it is placed in outhouses, in situations similar to those which our own Blackbird would choose, or in heaps of rubbish or low bushes only a foot or so from the earth. Nesting-operations usually commence about the third week in May; and eggs may be obtained from that date up to the first week in July. This bird is very irregular in breeding. You may not unfrequently take young birds and newly laid eggs from the same colony. The nest is very similar to the Blackbird's or the Ring-Ouzel's in construction and materials. The outside is made of coarse dry grass, with sometimes a few birch-twigs or a little moss interwoven, then plastered with mud and finally lined with a thick bed of fine grass. The eggs are from four to six in number, and, in rare instances, as many as seven or as few as three. None of our British Thrushes' eggs vary so widely as do the eggs of the Fieldfare. The average type of the egg is bluish green in ground-colour, thickly marbled, speckled, and blotched over the entire surface with rich reddish brown, the spots being the densest on the larger end, in fact resembling a very handsome Blackbird's egg. Some varieties are pale greenish, with the spots and streaks distributed equally over the whole surface and very pale and indistinct, like the duller eggs of the Blackbird; in others the egg is paler in ground-colour, but thickly and boldly blotched with reddish brown, like typical eggs of the Ring-Ouzel; while yet, again, specimens are more rarely met with almost as blue as those of the Song-Thrush, and with but one or two streaks of liver-brown on the larger end. They vary in length from 1·35 to 1·02 inch, and in breadth from ·9 to ·7 inch. When their nests are approached the birds often become very noisy and behave like Mistle-Thrushes, flying round the head of the intruder, and endeavouring to drive him away from their haunt. This conduct is more noticeable should the nests contain young birds; but their constitutional shyness soon prevails over their parental instincts, and before you have climbed your second tree, all trace of the Fieldfares has vanished, except the sound of their *tsak*, *tsak* in the distance.

"When the young quit the nest they still keep their parents company, wandering about the edges of the woods and open localities, appearing in the morning and evening on their feeding-grounds, retiring to the thickets at noon and at nightfall. Their food now is principally insects; but in July, when the wild strawberries are ripe, these constitute their principal fare. This regular mode of life continues throughout this month until the latter end, when the moulting-season commences. By the end of August the moult is over, and the birds begin to flock, and then their regular nomad life commences. They frequent all the large woods, and draw near to those districts where the rowan tree and the wild rose abound, on the berries of which they live for the most part, until the autumn sends them southwards to their winter haunts."

Adult male in winter plumage. General colour above dark chocolate-brown, verging on chestnut, the feathers of the mantle showing obscure black centres; lower back, rump, and upper tail-coverts ashy grey; the wing-coverts like the back, with faint ashy margins to the median and greater series; bastard-wing, primary-coverts, and quills blackish, the primaries externally edged with brown, the outer ones fringed with grey, the secondaries externally chocolate-brown like the back, the innermost black on the inner web, brown on the outer one, with ashy ends to the feathers; tail-feathers black; crown of head and hind-neck ashy-grey, the crown slightly streaked with blackish centres to the feathers; nasal plumes, lores, and feathers below the eye black; ear-coverts ashy-grey, as also the sides of the neck; cheeks and under surface of body rich mahogany-buff, the cheeks and throat narrowly streaked with black, these streaks becoming a little broader on the fore-neck and chest, the feathers on the side of the breast and chest being black with tawny edgings, which become greyish white on the flank-feathers; lower flanks ashy-grey like the rump; centre of abdomen and under tail-coverts pure white, the latter streaked laterally with ashy-blackish; thighs whitish, mottled with blackish bases to the feathers; axillaries and under wing-coverts pure white, some of the former with narrow black shaft-lines; quill-lining ashy-grey: bill yellowish, horn-brown at tip; feet reddish brown, the toes darker; iris hazel. Total length 10 inches, culmen 0·9, wing 5·7, tail 3·8, tarsus 1·2.

The bird described is a very fine old male shot by myself at Cookham in the severe winter of 1874, and there is very little difference between it and a male in the fullest breeding-plumage. In fact the winter plumage of a perfectly adult bird is finer in colour than that of any breeding specimen, as the feathers soon get abraded during the nesting-season. The older birds are distinguished by the greater amount of rufous on the throat and breast, younger birds having the centre of the breast white, as well as the abdomen. Considerable change takes place in the pattern of the feathers as the full plumage is gained, the black streaks on the throat and chest widening gradually and becoming spear-shaped, the dark colour of the flank-feathers being also apparently gradually assumed, the black sub-terminal bars following the outline of the feather and the basal part being by degrees filled up, sometimes, it would seem, with rufous, which ultimately becomes black, and in this way the dark appearance of the sides of the body is produced, the last remains of the light centre to the feathers surviving as a white shaft-streak.

Adult female. Scarcely differs from the male, but is, as a rule, not so highly coloured below. Total length 10 inches, wing 5·5.

The young birds reproduce the colour of the adults, but have the back and scapulars mesially streaked with a line of whitish down the centre of the feathers, this white line bordered and tipped with blackish; the mesial streaks on the lesser and median coverts yellowish buff instead of white; the greater series with ashy-brown margins, whitish towards the ends; the head and neck browner than in the adults, as also the ear-coverts, which have whitish shaft-lines; lower back and rump ashy grey, with hoary-grey margins to the feathers; the upper tail-coverts dark slaty-grey with white shaft-streaks and fringes, the latter preceded by a sub-terminal

line of blackish; throat and breast yellowish buff, with triangular spots of black, wider and not so longitudinal as in the old birds; the breast and abdomen dull white, spotted all over with dusky blackish tips to the feathers; on each side of the upper breast a black patch. After the first moult the young birds are browner than the adults, and the following is the description I made in 1871 of a bird from Tangier, which was figured in Sharpe and Dresser's 'Birds of Europe' (part ix.), and the exact counterpart of which I have never seen since:—

"*Young male in first winter plumage.* Upper surface of body dull brown, inclining to chestnut in the centre of the back; the nape and rump greyish, this shade of colour also extending to the upper tail-coverts, which are slightly shaded with brown. On being held towards the light a slight ashy edging to most of the back-feathers may be perceived. The wing-coverts are also dull chestnut-brown, with obsolete greyish margins; the quills and tail dull brown, with narrow whitish edgings and tips, the secondaries being almost entirely of a dull chestnut-brown, like the back and scapulars, the tail also slightly washed with brown; lores and a narrow eyebrow golden buff; the feathers in front and under the eye blackish; ear-coverts dull greyish, tinged with brown; cheeks, throat, breast, and flanks rich golden buff, mottled with black, the two former marked with little triangular dots, which do not collect or form a moustachial streak, but extend high up the throat, the intermediate chin being whitish; the sides of the breast and flanks more thickly mottled with blackish, which has on the latter a strong chestnut shade; the whole of the lower breast and belly snowy white, the under tail-coverts slightly washed with brown; the under wing-coverts and feathers on the sides of the upper breast pure white: bill horn-brown, the whole of the base of the lower mandible yellowish; feet fleshy brown, the toes darker.

"In the following spring, when the bird takes his adult dress, no moult takes place, but the dull edgings to the feathers are cast off and the head and rump become blue-grey, this colour also pervading the edges of the quills; the brown triangular spots on the breast gradually dilate and widen out till they occupy the whole centre of the feather; the golden tinge on the breast is not so bright, and the flanks are strongly tinged with chestnut, while the black markings on them grow more pronounced and zigzag in shape; the bill becomes bright waxy yellow, and the feet simultaneously dark fleshy brown, the toes being exactly the same colour. These changes are exhibited in a specimen in Mr. Howard Saunders's collection, shot by Dr. Krüper in Macedonia on the 3rd of March, 1870."

The figure of the adult bird is taken from a male killed in Heligoland in March 1878, and the young female from a Krasnojarsk specimen taken in July, both being in the Seebohm Collection.

[R. B. S.]

TURDUS JAMAICENSIS, *Gm.*

JAMAICA WHITE-THROATED THRUSH.

Jamaica Thrush, Lath. Gen. Syn. ii. pt. 1, p. 20 (1783).
Turdus jamaicensis, Gm. Syst. Nat. i. p. 809 (1788); Seebohm, Cat. Birds Brit. Mus. v. p. 208 (1881).
Merula jamaicensis, Gosse, B. Jamaica, p. 142, Illustr. pl. xxiv. (1847); Cory, B. West Indies, p. 16 (1889).
Turdus capucinus, Hartl. MSS.; Bp. Consp. i. p. 271 (1850).
Turdus leucophthalmus, Hill, MSS.; Bp. Consp. i. p. 271 (1850).
Turdus lereboulleti, Bp. C. R. xxxviii. p. 3 (1854).

T. plagâ conspicuâ gulari albâ: dorso saturatè schistaceo: pileo chocolatino: axillaribus schistaceis, hypochondriis concoloribus.

The present species belongs to the section of striped-throated Thrushes which Seebohm called his "Sub-generic group Planestici," with the spots on the under surface confined to the chin, cheeks, or upper throat (*cf.* Cat. Birds Brit. Mus. v. p. 186). It further belongs to the division of the genus *Turdus* which has a conspicuous white gular patch between the striped throat and the plain-coloured fore-neck and chest; and it is distinguished from all its allies by its slaty-grey axillaries, combined with its chocolate-brown head, which contrasts with the slaty-grey back.

Turdus jamaicensis is entirely confined to the island of Jamaica, and nothing appears to have been published on its habits beyond the following notes of the late P. H. Gosse:—"This is exclusively a mountain bird; inhabiting the very same localities, and subsisting on the same food, as the Solitaire, the pulpy berries of a Scrophularious shrub, which the negroes thence call the *Glass-eye berry*. I have never found any animal substance in the stomach of this species, numbers of which I have examined; one in December contained many of the little scarlet figs from the tree on which I shot it; in February the green pimento-berries are devoured by them; and later in the spring, it appears, the shining fruit of the Sweetwood (*Laurus*) is attractive to them. On the 30th of March my lad shot a male Glass-eye by the roadside at Cave, scarcely a stone's throw from the sea, and level with it; the stomach contained the berries of this *Laurus*, which is abundant just there. This is the only instance in which I ever heard of the species away from a mountain valley.

"The common names of this bird are bestowed in allusion to the tint of the iris of the eye; this, as Mr. Hill observes, 'is not absolutely white, but so transparently suffused with a hue of olive, that the eye has the look of very common glass.'

"The figure, attitudes, and motions of the Glass-eye are those of its fellow, the Hopping Dick (*Merula aurantia*); it is, however, much more recluse, and jealous of being seen. The dashing manner of flight across the wood-paths are the same in both birds, but the loud and startling tones of the lowland bird are wanting in this. The Glass-eye has but one note *that I have heard*; a single low '*quank*,' frequently repeated as he hops from bush to bush, or plunges into the thicket. Dr. Chamberlaine attributes to him 'the same loud sonorous chirp as he stealthily scuds from one

dark recess of the forest to another'; but I should think him mistaken, were it not that Robinson, who gives a very correct drawing of the species by the name of *Turdus capite ferrugineo*, and describes it as common in the Liguanea mountains, affirms that 'it whistles like our English Blackbirds.'"

Adult male. General colour above slaty-grey, the wing-coverts like the back; bastard-wing, primary-coverts, quills, and tail blackish, externally washed with slaty-grey, more ashy on the edge of the primaries; crown of head, sides of face, and nape rufous-chocolate; feathers in front of the eye dusky blackish; sides of neck and hinder neck slightly washed with olivaceous-brown; cheeks uniform rufous-chocolate; chin and upper throat pure white, with triangular spots of rufous-brown, giving a streaked appearance; the lower throat pure white, forming a conspicuous patch; fore-neck and breast pale slaty-grey, as also the sides of the body, which are slightly tinged with brown; centre of breast and abdomen pure white; under tail-coverts white, strongly mottled with black bases to the feathers; axillaries and under wing-coverts light slaty-grey like the sides of the breast; quills dusky below, ashy along the inner webs: "bill black, the basal half of the lower mandible sometimes yellow; feet dark brown, the soles yellow; iris bluish-white, somewhat pellucid" (*P. H. Gosse*). Total length 8·3 inches, culmen 0·75, wing 4·7, tail 3·4, tarsus 1·4.

Adult female. According to Mr. Gosse, the sexes are alike in colour.

Some specimens have the back slightly washed with olive and are not so blue in tint. The chest and sides of the body are also perceptibly more ashy-brown and not so grey in some individuals, so that there is apparently a slight difference in colour at different seasons of the year.

The specimen figured in the Plate is a male in the Salvin-Godman Collection, procured by the late Dr. Henry Bryant at Moneague, in February 1865. [R. B. S.]

TURDUS PHÆOPYGUS, *Cab.*

CABANIS'S WHITE-THROATED THRUSH.

Turdus phæopygus, Cab. in Schomb. Reis. Guian. iii. p. 666 (1848); Scl. & Salv. Exot. Orn. p. 149, pl. lxxv. (1869); Seebohm, Cat. Birds Brit. Mus. v. p. 208 (1881).
Planesticus phæopygus, Bp. C. R. xxxviii. p. 3 (1854).
Merula phæopygus, Stejneger, Proc. U.S. Nat. Mus. v. p. 453 (1883); Chapm. Bull. Amer. Mus. vi. p. 22 (1894).
Turdus phæopygoides (nec Seebobm), Tacz. Orn. Pérou, i. p. 490 (1884).
Turdus phæopygus saturatus, Berlepsch, P. Z. S. 1896, p. 326.

This species is characterized by the conspicuous white patch on the throat, by its slaty-grey axillaries, which resemble the sides of the body, and by its russet-brown or olive-brown back, which slightly contrasts with the slaty-grey upper tail-coverts. It differs from *T. jamaicensis*, its nearest ally, in having the head of the same colour as the back.

This Thrush was originally described from British Guiana by Dr. Cabanis in his account of the birds collected by Schomburgk (Reis. Guian. iii. p. 666). From Guiana it ranges south to Amazonia, Ecuador, Eastern Peru, and Bolivia.

Dr. A. R. Wallace met with the species near Pará, as did also Mr. Layard, who writes:—"One was shot on September 8th from a flock of perhaps half a dozen individuals which flew across an open road in the forest, the Strada Braganza" (Ibis, 1873, p. 376). Natterer also obtained a specimen near Pará in October. Dr. A. R. Wallace procured specimens at Cobati on the Rio Negro (Scl. & Salv. P. Z. S. 1867, p. 568), and Natterer in the forests near Borba in December, near Castanheiro, on the Rio Negro, in the same month, and at Maribatanas in March (Pelz. Orn. Bras. p. 93). Higher up on the Amazons it has been found by Mr. Edward Bartlett at Chyavetas and Chamicuros in August (Scl. & Salv. P. Z. S. 1873, p. 255), and by Whitely at Yquitos on the 25th of September. Mr. Bartlett says that it is common in Eastern Peru, always in high and sandy country. Dr. Rusby states that he found the present species from the Falls of the Madeira to Bolivia; it was seen, along with *T. gymnophthalmus*, on the roads through the dense forests, but in the vicinity of cleared land (Allen, Bull. Amer. Mus. ii. p. 78).

The British Museum contains specimens from Cayenne (*Sclater Coll.*), from Demerara (*Eyton Coll.*), and from the Maroni River in Surinam (*Kappler; Clarence Bartlett*). A young bird procured by the last-named collector was figured by Messrs. Sclater and Salvin in the 'Proceedings of the Zoological Society' for 1867 (pl. xxix.). A considerable series of specimens was obtained in British Guiana by Henry Whitely on Roraima in January, May, November, and December, at Bartica Grove in August, September, and December, at Camacusa in March and April, and on the Merumé Mountains at the end of July.

In Trinidad Léotaud says that the species is usually met with in the forests of the interior in small flocks, except during the breeding-season, when they separate off into pairs. "In its motions this Thrush is a lively and active bird, and has a sweet, loud, and rather varied song, which is usually heard during the middle of the day, as in the morning and evening it is usually occupied in searching for the berries which constitute its food" (Ois. Trinidad, p. 197). Mr. Frank Chapman obtained specimens in Trinidad at Caparo and Caura.

Ernst records it as an inhabitant of Venezuela (Estud. Flor. y Faun. Venez. p. 301, 1877), and a specimen from this country is in the Seebohm Collection in the British Museum and is figured in the present work as *Turdus phæopygoides*. The type of the last-named species is also in the Museum; it was procured in the island of Tobago by Governor Ussher. After a comparison with specimens from the mainland, I am unable to see any reason why the Tobago bird should be separated from *T. phæopygus*. Count von Berlepsch separates the Colombian form as *Turdus phæopygus saturatus* (*l. s. c.*), but specimens from Bogotá (*coll. Seebohm* and *Salvin-Godman*) are absolutely inseparable from *T. phæopygus*. Buckley obtained the species at Sarayacu in Ecuador, while Mr. O. T. Baron has met with it near Guayabamba in Peru in August, at 3800–4000 feet elevation.

Beyond the note given by Léotaud, and recorded above, I have found no information as to the habits of this Thrush. Mr. Layard (Ibis, 1873, p. 378) says that he found seeds in the stomach of a specimen killed near Pará, while Léotaud states that its food consists of berries.

Adult male. General colour above dark olive-brown, slightly russet in tint, becoming slaty-grey on the lower rump and upper tail-coverts; wing-coverts like the back; bastard-wing, primary-coverts, and quills dusky brown, externally olive-brown, the inner secondaries entirely like the back; tail blackish-brown, washed with slaty-grey; lores slaty-blackish, with a slight supra-loral tinge of lighter grey, which also spreads a little below the eye; ear-coverts and cheeks uniform dusky olive-brown, the former slightly mottled with white streaks on the lower part; chin and upper throat white with dusky brown centres to the feathers, producing a striped appearance, this streaked area being sharply defined and succeeded by a conspicuous patch of white on the lower throat; fore-neck, breast, and entire sides of body light slaty-grey, the centre of the abdomen and under tail-coverts pure white; thighs slaty-grey with whitish fringes to the feathers; sides of chest dark olive-brown like the sides of the neck; under wing-coverts and axillaries light slaty-grey; quills dusky below, slightly more ashy along the inner web. Total length 7·5 inches, culmen 0·65, wing 4, tail 2·9, tarsus 1·1.

Adult female. Does not differ in colour from the male. Total length 7·5 inches, wing 4.

Young birds are rather more rufescent than the old ones, but otherwise reproduce the same colours of the upper surface, excepting that the feathers are all mesially streaked with tawny-buff; the throat and centre of the breast and abdomen, as well as the under tail-coverts, are white, with dusky margins to the feathers of the throat; the chest and sides of the body are orange-buff, with rather broad blackish margins to the feathers, the white breast and abdomen being also slightly mottled with dusky margins to the feathers; under wing-coverts and axillaries orange-buff, with dusky bases.

As already stated, I do not believe that the separation of *Turdus phæopygoides* from *T. phæopygus* can be maintained, and my opinion is that the more russet or more olive colour of the upper parts is dependent on season, as is most certainly the case in *T. leucauchen*. Specimens from British Guiana match the olive-coloured type of *T. phæopygoides* from Tobago, and the fine series collected in British Guiana by Whitely clearly shows that the more russet-coloured birds are those found from November to January, and the more olive-coloured ones are those procured in August and September after the moult. Whitely's specimens represent the bird in nearly every month of the year and in every stage of plumage, and no one can doubt that *T. phæopygoides* is only the winter plumage of *T. phæopygus*.

The dimensions of this species vary considerably, and a difference in length of wing is of no importance in a series.

The specimen figured as *T. phæopygus* is from Yquitos, and is in the Seebohm Collection.

[R. B. S.]

TURDUS PHÆOPYGOIDES, *Seebohm*.

TOBAGO WHITE-THROATED THRUSH.

Turdus jamaicensis (nec Gm.), Jardine, Ann. & Mag. Nat. Hist. xx. p. 329 (1847).
Turdus phæopygus, pt., Seebohm, Cat. Birds Brit. Mus. v. p. 208 (1881).
Turdus phæopygoides, Seebohm, Cat. Birds Brit. Mus. v. p. 404 (1881).

The figure of *Turdus phæopygoides* in the accompanying Plate was drawn under the direction of the late author, who thus appears to have been thoroughly convinced of the difference between this supposed species and *T. phæopygus*. I have already expressed my opinion that the Tobago bird is identical with the Continental form, and I believe that Seebohm himself, after an examination of the material at present in the British Museum, would have acquiesced in the correctness of this decision.

The specimen sent to the Museum from Tobago by the late Governor Ussher was unaccompanied by any note on the habits of the bird, but Mr. Kirk wrote as follows to Sir William Jardine :—"Utters a 'chuck chuck' while hopping along the ground; is particularly shy and restless; feeds upon small berries and upon the seeds of the cabbage-tree."

The following is Seebohm's note on the distinctive characters of *T. phæopygoides* (Cat. Birds Brit. Mus. v. p. 404) :—"Examples from Eastern Peru (*cf.* Scl. & Salv. P. Z. S. 1867, p. 754) are still more russet-brown than typical skins from Guiana, whilst an example from the island of Tobago is more olive-brown and larger in size. If the latter form be sub-specifically distinct, which must be conceded if the lines laid down by Neotropical ornithologists be followed, I propose to call it *Turdus phæopygoides*."

Taczanowski afterwards referred specimens from Eastern Peru to *T. phæopygoides* (Orn. Pérou, i. p. 490), but he apparently knew only of the examples from Chyavetas and Chamicuros collected by Bartlett and now in the British Museum: these are certainly inseparable from true *Turdus phæopygus*. Another misapprehension on Taczanowski's part appears to have been that the distinctive character of *T. phæopygoides* consisted in the more *rufous* shade of the upper surface, whereas the contrary is the case, for Seebohm separated the Tobago bird on the strength of its more *olive* coloration, and the specimen figured in the Plate is an olive-coloured specimen from Venezuela in his own Collection. In deference to Seebohm's opinion, I have treated of *T. phæopygoides* as a distinct species, but I have no doubt in my own mind that it is not really separable from *T. phæopygus*. [R. B. S.]

TURDUS SPODIOLÆMUS, *Berl. & Stolzm.*

PERUVIAN WHITE-THROATED THRUSH.

Turdus phæopygus spodiolæmus, Berl. & Stolzm. P. Z. S. 1896, p. 326.

An adult male of this supposed race of *T. phæopygus* was procured by Mr. Jean Kalinowski at La Gloria in Central Peru, and was described by Count von Berlepsch and Mr. Stolzmann as distinct from that species, on the following characters:—"The specimen differs from typical examples of *T. phæopygus* from British Guiana in its somewhat larger size and by its more uniformly black throat, this colour extending also lower down. The blackish feathers of the throat have only a narrow whitish border, while in the typical form these edges are broad and of a pure white, forming regular streaks. In the colour of the upper surface the Peruvian bird is almost identical with that from Guiana, whilst the form which inhabits Eastern Ecuador, and is represented in collections from Bogotá, is recognizable on account of its dark brown or bistre-brown colour (*T. phæopygus saturatus*, Berlepsch)." The specimen from La Gloria had the iris dark brown; the bill blackish, the base of the lower mandible olive-yellow; the feet brown.

Of *Turdus saturatus* I have already spoken under the heading of *Turdus phæopygus*, and I have no doubt that it is identical with that species. Of *Turdus spodiolæmus* I cannot speak with certainty, having never seen the specimen described; but I feel sure that the colour of the upper surface is a character of no importance in these Thrushes, depending on season alone, and the distinctness of the striping of the throat depends upon the wear and tear of the feathers of this portion of the bird's body, the white edgings becoming abraded in time.

In my own mind, I have little doubt that *Turdus spodiolæmus* is not distinct from *T. phæopygus*.

[R. B. S.]

TURDUS TRISTIS (*Swains.*).

MEXICAN WHITE-THROATED THRUSH.

Merula tristis, Swains. Phil. Mag. 1827, p. 369.
Turdus assimilis, Cab. Mus. Hein. Th. i. p. 4 (1850).
Planesticus tristis, Bp. C. R. xxxviii. p. 4 (1854).
Planesticus assimilis, Bp. C. R. xxxviii. p. 4 (1854).
Turdus tristis, Licht. Nomencl. Av. Berol. p. 26 (1854); Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 15 (1879); Seebohm, Cat. Birds Brit. Mus. v. p. 211 (1881).
Merula tristis assimilis, Chapman, Bull. Amer. Mus. x. p. 19 (1898).

T. notæo olivascenti-brunneo, uropygio clariore: plagâ gulari conspicuâ albâ: caudâ olivaceâ: rostro nigro vel corylino: remigibus intùs fulvo adumbratis.

This species of White-throated Thrush has generally been believed to intergrade with *T. leucauchen*, and to range from Mexico to Panama. Looking at the small series of specimens at the disposal of Messrs. Salvin and Godman in 1879 (*cf.* Biol. Centr.-Amer., Aves, i. p. 16), and Mr. Seebohm in 1881 (Cat. Birds Brit. Mus. v. pp. 211, 212), it is scarcely to be wondered at that the former authors united *T. tristis* and *T. leucauchen* together, and that Seebohm treated them as races of one species. According to him, both races were to be found in Central America, and he considered that in Honduras, Nicaragua, and Costa Rica intermediate forms occurred. This conclusion, as will be seen below, I believe to be entirely erroneous.

In the 'Biologia,' Messrs. Salvin and Godman write:—"Within Mexico and Central America *T. tristis* has a wide range, extending from South Mexico to the State of Panama; but within this area a very considerable amount of variation is observable in a large series of specimens. Mexican individuals, which are typical of *T. tristis*, have the back olive-brown and a light-coloured tail. In Guatemala, especially in the western parts, birds with a rich olive-brown back are common; but their tails are somewhat darker than those of Mexican specimens. Similar birds also occur at the extreme end of the range of the species, in the State of Panama. In the northern parts of Vera Paz the prevalent form of this Thrush has the back of a blackish ash-colour; the white mark on the throat is also more conspicuous than in the Mexican bird, and the black throat-marks more plainly shown. Upon one of these Vera Paz specimens Sclater bestowed the name *T. leucauchen*; but, from the time the separation was made, specimens have been reaching us from various parts showing characters connecting by every stage of transition *T. leucauchen* to *T. tristis*. We have thus been obliged to merge the former name as a synonym of the latter; for it is evident that *T. leucauchen*, though in its extreme form very different from *T. tristis*, is not nearly sufficiently segregated to admit of the two races bearing distinct names. The true *T. leucauchen* form is not strictly confined to the forests of northern Vera Paz, but is also found in Honduras, Nicaragua, and Costa Rica, but everywhere mingled with birds approaching the *T. tristis* type of colour."

Such was the conclusion arrived at by the above-named authors in 1879, and the argument could not have been more aptly put. It must, however, be remembered that at that time there was scarcely a specimen of these Thrushes with the date of its capture attached to it, excepting always

the series collected by the authors themselves in Guatemala. To all appearances, therefore, the dark brown specimens would have seemed to any one to be intermediate between the olive birds (*T. tristis*) and the slaty-grey birds (*T. leucauchen*), and hence the conclusions of Messrs. Salvin and Godman and Mr. Seebohm.

The fine series of skins of both forms now in the Salvin-Godman Collection, accompanied by every detail of sex, locality, altitude, and date, have, I trust, enabled me to solve this knotty question, so that I am now able to affirm that *T. tristis* and *T. leucauchen* are in reality two distinct species, liable only to be confounded in their winter-plumages, for, in the breeding-plumage, *T. leucauchen* is easily recognizable.

T. tristis is confined to Mexico, and is distinguished by its olive-brown head and back; the rump is a little clearer olive than the back, and the tail is also olive; the bill is never yellow, but blackish or horn-brown; the quill-lining is pale buff. *T. leucauchen*, on the other hand, is slaty-grey above in summer and has a yellow bill. In winter the bill is blackish or horn-brown, but at this season the birds can always be recognized from *T. tristis* by their black tails; the quill-lining is ashy-whitish, not buff. It replaces the last-named bird in Central America from Chiapas to Panama.

By the addition of the localities of the specimens now in the Salvin-Godman Collection to those already given in the 'Biologia' and in recent publications, the range of *Turdus tristis* appears to be as follows, so far as is at present known:—Culebra, Sinaloa, Sonora, June 5, 1888 (*W. Lloyd*: *mus. S.-G.*); Tepic, May 23–31, 1889 (*W. B. Richardson*: *mus. S.-G.*); Sierra Madre de Tepic (6000 ft.), June 23 (*W. B. Richardson*: *mus. S.-G.*); Beltran, Jalisco, April 30, 1889 (*W. Lloyd*: *mus. S.-G.*); Hacienda San Marcos, Zapotlan, May 9, 1889 (*W. Lloyd*: *mus. S.-G.*); Tonila, Zapotlan, June 14, 1889 (*W. Lloyd*: *mus. S.-G.*); Sierra Nevada de Colima, Dec. 14, 1889 (*W. B. Richardson*: *mus. S.-G.*); Volcan de Colima, Dec. 29, 1889 (*W. B. R.*: *mus. S.-G.*); Omilteme, Guerrero (8000 feet), July 1888 (*Mrs. D. W. Smith*: *mus. S.-G.*); Amula, Guerrero (6000 feet), August (*D. W. Smith*: *mus. S.-G.*); Guadalajara (Jouy, Proc. U.S. Nat. Mus. xvi. p. 774); Valley of Mexico, near the city of Mexico (*G. H. White*: Sclater, P. Z. S. 1864, p. 172); Tetelco (Xochimilco), Jan. 18, 1888 (*F. Ferrari-Perez*: *mus. S.-G.*); Puente nacional (*Pease*: S. & G. Biol. p. 18); S. Bartolo, Puebla, May 15 (*F. Ferrari-Perez*: *mus. S.-G.*); Temascaltepec (*Bullock*: Swainson, *l. c.*); Jalapa (*De Oca*; *Sallé*: Scl. P. Z. S. 1857, p. 202; Ferrari-Perez, Proc. U.S. Nat. Mus. ix. p. 131); Jalapa, May, July, 1888 (*F. D. Godman*: *mus. S.-G.*); Coatepec, Jalapa, Nov. 1889 (*M. Trujillo*: *mus. S.-G.*); El Patio, Jalapa, June 1888 (*M. Trujillo*: *mus. S.-G.*); Vigia (*Sallé*: Scl. P. Z. S. 1857, p. 202); Juquila and Totalcingo (*Boucard*: Scl. P. Z. S. 1859, p. 370); Orizaba (*Botteri*: *mus. P. L. Sclater*); Orizaba, April 1888 (*F. D. Godman*); forests of Muero, Potrero, Cordova, and Orizaba (F. Sumichrast, Mem. Bost. Soc. N. H. i. p. 543); Juchatengo, Oaxaca, April 1889 (*M. Trujillo*: *mus. S.-G.*).

Not many notes have been published on the habits of the present species. Jouy states that he found it common on the Barranca Ibarra, near Guadalajara, Central Mexico. The only note heard was a single sharp chirp or alarm-note (Pr. U.S. Nat. Mus. xvi. p. 774).

Sumichrast (Mem. Bost. Soc. i. p. 543) writes:—"Judging from the large number of localities in which this species is found in the State of Vera Cruz, it must have a very extended area of distribution,—restricted, however, in the hot and temperate regions to an altitude of 1300 metres,—for I have procured specimens on the Gulf coast, in the forests of Muero, at Potrero, near Cordova (590 metres), at Orizaba (1220 metres), &c. Although a sedentary bird, it is not always to be found in the same localities, but changes its residence frequently, influenced by the ripening berries upon which it feeds."

Mr. F. M. Chapman says that this was the most abundant species observed at Jalapa and Las Vigas. "Its calls," he says, "resemble those of the Robin (*M. migratoria*), but are apparently

less varied; its song is, however, to my mind, much richer and more musical than that of the Robin. Dozens of these birds could be heard singing early each morning, and in the afternoon we were again serenaded by this inspiring chorus of bird-song."

Eggs of the present species procured by Mr. Boucard from Oaxaca are described by Dr. Sclater as "resembling pale varieties of the European Blackbird, being of a pale greenish-white, spotted and freckled with two shades of rufous. They measure 1·1 inch by 0·75."

Adult male in winter plumage. General colour above dark olive-brown, the head scarcely deeper in tint than the back; the rump clearer olive than the back; the wing-coverts like the back; the bastard-wing, primary-coverts, quills, and tail dark sepia-brown, externally washed with olive-brown, the primaries rather paler on the margins, and the innermost secondaries entirely olive-brown; lores dusky; ear-coverts and sides of face dark olive-brown, with scarcely perceptible pale fulvous shaft-streaks; chin and throat white, with broad mesial triangular spots of black, giving a streaked appearance to the throat, these spots collecting on the malar line and forming a moustachial streak, above which is a broad line of white along the cheeks; lower throat white, forming a large patch; fore-neck, chest, and sides of body light ochreous-brown, tinged with ashy, and slightly darker on the lower flanks; thighs like the flanks; centre of breast, abdomen, and under tail-coverts white, with dusky edgings to the base of some of the feathers; under wing-coverts and axillaries clear orange-buff, the outer coverts ashy-brown; quills light sepia-brown below, the quill-lining pale orange-buff along the inner web. Total length 8·8 inches, culmen 0·9, wing 4·75, tail 3·6, tarsus 1·2.

Adult female. Does not differ in colour from the male. Total length 9 inches, wing 4·5.

In the breeding-season the plumage becomes much worn and decidedly greyer, especially on the head, wings, and tail. The breast and sides of the body are also more ashy-brown, and there is less of the buff tinge seen in the winter-dress: "bill plumbeous; feet dark plumbeous; iris brown" (*W. Lloyd*).

Young. Rather darker olive than the adults and having longitudinal centres of orange-buff to the feathers of the upper surface, the wing-coverts tipped with triangular spots of the same colour; under surface tinged with orange-buff, and mottled with blackish tips and bars at the end of the feathers, more distinct on those of the chest and less marked on the abdomen; throat minutely spotted with dusky brown.

Young birds after their moult may be distinguished from old ones by the more or less distinct remains of tawny spots at the ends of the greater wing-coverts, which are retained till the following spring. One obtained by Mr. Richardson at Tepic on the 26th of May has likewise a few triangular dusky spots on the ashy-brown fore-neck.

There is apparently some variation in the size of individuals of this Thrush; for instance, a female from Omilteme has the wing 5·25 inches, while one from Jalapa measures only 4·5. A male from the same place has a wing of 5 inches.

Mr. F. M. Chapman (*l. c.*), on the authority of Mr. Nelson, proclaims that Western birds are different from those of Eastern Mexico. He writes:—"Comparison of two specimens of this Thrush, collected by Dr. G. A. Buller, at Tonila, Jalisco, with eight specimens from Jalapa, shows such marked differences in colour that I have submitted my Jalapa material to Mr. E. W. Nelson for comparison with his large series of *Merula tristis* from the west coast region, including specimens from Huitzilac, Morelos, which is the same district as Temascaltepec, the locality whence came Swainson's type. Mr. Nelson kindly writes me that the Jalapan birds differ from west coast examples in their darker coloration, the wings and tail being blackish brown, not greyish olive-brown, the brown on the flank being greyer and darker. West coast birds are somewhat the larger, as the following average measurements of series of males from Morelos and Jalisco and from Jalapa

show:—West coast birds: wing 5·12, tail 4·06, tarsus 1·26; Jalapa birds: wing 4·98, tail 3·94, culmen 0·83, tarsus 1·20. It thus appears that the east coast bird is well entitled to subspecific rank, and I apply to it, therefore, the name *assimilis* of Cabanis, based by him on Jalapa specimens."

Mr. Salvin and I have examined the series of specimens in the British Museum with a view to determining the above-mentioned differences between eastern and western specimens, and we cannot discover any ground for their separation, when examples killed at the same time of year are compared. The differences noted by Mr. Nelson are those of season. Examples from Huatusco and Coatepec are absolutely identical with others from Omilteme and Colima. There is no geographical isolation between these supposed races of Eastern and Western Mexico, as the Salvin-Godman Collection contains specimens from intermediate localities.

The figure in the Plate represents a specimen from the neighbourhood of the city of Mexico, in the Seebohm Collection. [R. B. S.]

TURDUS LEUCAUCHEN, *Sclater*.

SCLATER'S WHITE-THROATED THRUSH.

Turdus leucauchen, Sclater, P. Z. S. 1858, p. 447; Seebohm, Cat. Birds Brit. Mus. v. p. 212 (1881: pt.).

Turdus tristis (nec Swains.), Salvin, P. Z. S. 1870, p. 180; id. and Godman, Biol. Centr-Amer., Aves, i. p. 16 (1879: pt.).

T. plagâ gutturali albâ conspicuâ: caudâ nigricante: rostro flavo; notæo schistaceo (*ptil. æstiv.*): rostro corylino vel nigricante; notæo rufescenti-brunneo vel saturatè olivascenti-brunneo (*ptil. hiem.*).

I HAVE already gone so fully into the relations of this species with its Mexican ally, *T. tristis*, that I have little to add on the subject under the heading of *T. leucauchen*. The latter species was described by Dr. Sclater from specimens procured in Vera Paz, Guatemala, by Skinner (P. Z. S. 1858, p. 447), and Messrs. Salvin and Godman found it in the same country at Coban, Choctum, the forest between Cahabon and San Luis, and also at Dueñas (Biol. Centr.-Amer., Aves, i. p. 15). It is likewise found in Chiapas in Southern Mexico, and is apparently resident there, as Mr. Richardson has sent specimens to Messrs. Salvin and Godman from Union Juarez (March 24–30), from Jitotol (May 6) and Santa Rita (May 8). The two latter birds are in nearly full breeding-plumage, while the ones killed in March still retain their dark winter dress.

The following is a list of the localities in which the species has been procured, most of the specimens being in the Salvin-Godman Collection:—Volcan de S. Miguel, Salvador, March 30, April 5 (*W. B. Richardson*: *mus. S.-G.*); Cayo, western district of British Honduras, April 4–17 (*F. Blancaneaux*: *mus. S.-G.*); San Pedro, Honduras (*G. M. Whitely*: Scl. & Salv. P. Z. S. 1870, p. 838); Chontales, Nicaragua (*T. Belt*: Salvin, Ibis, 1872, p. 314); La Libertad, Chontales (*W. B. Richardson*: *mus. S.-G.*); Matagalpa, Aug. 22 to Sept. 28 (*W. B. Richardson*: *mus. S.-G.*); Jali, May 12–15 (*W. B. Richardson*: *mus. S.-G.*); Santa Cruz, Rio Coco, April 20 (*W. B. Richardson*: *mus. S.-G.*); Costa Rica; Dota Mountains (*J. Carmiol*: Lawr. Ann. Lyc. N. Y. ix. p. 91); Navarro (*J. Cooper*: Lawr. *l. c.*); Tucurriqui (*E. Arcé*: *mus. S.-G.*); Irazu district (*H. Rogers*: *mus. S.-G.*); Panama, Volcan de Chiriqui, Boquete de Chitra, Cordillera de Tolé, Calovevora, Calobre, Santa Fé (*E. Arcé*; *mus. S.-G.*: Salvin, P. Z. S. 1870, p. 180).

Messrs. Salvin and Godman write:—"This species is seldom found to be absent from the neighbourhood of Dueñas in the plains between the volcanoes of Agua and Fuego, where *Ipomœa murocoides* abounds. It is there rather a shy bird. We never found its nest, but obtained young birds which had not thrown off their first spotted plumage. In Vera Paz it is by no mean common in the vicinity of Coban; but at a lower elevation in the forests that stretch away to the confines of Peten it is very abundant. The bird-collectors of Coban obtain many skins from this district in the dry season between January and March; and we ourselves observed it wherever we went in these forests. Owing, perhaps, to the different character of the vegetation of this part of Vera Paz to that which prevails at Dueñas, it is here a strictly forest-loving species."

Mr. C. F. Underwood says that on the Volcano of Miravalles, in Costa Rica, *T. leucauchen* was abundant in the forests, feeding on the fruit of the *Higueron* and other trees; it was "somewhat wild, seeming to perceive one from a long distance" (Ibis, 1896, p. 432).

Adult male in winter plumage. General colour above ruddy-brown, the head like the back; wing-coverts like the back; bastard-wing, primary-coverts, and quills dark sepia-brown, externally ruddy-brown like the back, the innermost secondaries resembling the latter; lower back, rump, and upper tail-coverts decidedly more olive than the rest of the back; tail blackish, with a slight ashy shade; lores dusky; sides of face dark ruddy-brown, with paler hair-like shaft-lines; chin and throat white, with broad triangular spots of black, producing a streaked appearance; cheeks with a broad white streak above the malar line; on the lower throat a large patch of pure white; fore-neck, breast, and sides of body earthy-brown, tinged with ochraceous, the thighs also brown; centre of abdomen and under tail-coverts pure white, the latter mostly edged with dark brown, especially towards the base; axillaries and under wing-coverts light ochraceous-brown like the sides of the body, but with a distinct tinge of golden buff; quill-lining sepia-brown, ashy along the inner webs, inclining to whitish near the base of the latter; bill dark. Total length 9·3 inches, culmen 0·9, wing 4·95, tail 3·7, tarsus 1·2.

Adult female. Similar to the male in colour. Total length 9 inches, wing 5·0.

Young. Rather greyer than the adults in winter, the upper surface being streaked with tawny-buff centres to the feathers.

For the proper understanding of the various plumages through which this species passes I have taken the series collected by Mr. Salvin and Mr. Godman in Guatemala. These range from the months of August to January, and in the first of these months Mr. Salvin obtained two young birds which were completing their moult into the first winter plumage. An old bird in freshly-moulted plumage was also obtained by them in August, and has a blackish bill. Birds procured by the same naturalists in October, November, and December are very similar in colour to the August bird, but have a slight inclination to yellow on the lower mandible, as well as a faint tinge of grey on the crown in the December birds. Those killed in January, however, are very perceptibly greyer on the head and have the bill yellow. Unfortunately there are no birds obtained from Guatemala between January and August in the collection; but it is quite evident that the bill turns yellow in summer (which is never the case with *T. tristis*), and the upper plumage becomes slaty-grey, the olive or brown tint on the back gradually disappearing and becoming abraded. This fact is abundantly proved by the large series in the Salvin-Godman Collection from other parts of Central America.

The figures in the Plate are drawn from a specimen from "Central America," in the Seebohm Collection. [R. B. S.]

TURDUS DAGUÆ, *Berlepsch.*

BERLEPSCH'S WHITE-THROATED THRUSH.

Turdus daguæ, Berlepsch, Orn. Monatsb. v. p. 176 (1897).

T. similis *T. leucaucheni*, sed minor, saturatior; et rostro nigro distinguendus.

This species was obtained by Mr. Hopke in the neighbourhood of S. José, Dagua, in Western Colombia, in November and December 1896. Count von Berlepsch has described the species as nearly allied to *T. tristis* (i. e. *T. leucauchen*), but says that it is a smaller bird, with a shorter and more slender bill, and having the upper surface darker brown and less rufous, the bill being also blackish. A second specimen, collected by Mr. Rosenberg at Cochabi, in Northern Ecuador, is in the possession of the Hon. Walter Rothschild.

The species is so closely allied to *T. leucauchen* that it is very doubtful if it can really be separated from it. The specimen which Count von Berlepsch has presented to the Salvin-Godman Collection is hardly to be distinguished from a Veraguan skin in the same Collection. The black bill and the darker coloration are merely indicative of *T. leucauchen* in winter plumage, and I fully expect that *T. daguæ* will ultimately be found to be identical with the last-named bird (Sharpe, Bull. Brit. Orn. Club, vii. p. xxvi). [R. B. S.]

TURDUS CROTOPEZUS, *Licht.*

BRAZILIAN WHITE-THROATED THRUSH.

Turdus crotopezus, Licht. Verz. Doubl. p. 38 (1823); Scl. & Salv. Exot. Orn. p. 145, pl. lxxiii. (1869); Seebohm, Cat. Birds Brit. Mus. v. p. 210 (1881).
Turdus albicollis (nec V.), Spix, Av. Bras. i. p. 71, pl. lxx. (1824).

T. plagâ gulari conspicuâ albâ: caudâ cinereâ vel pallidè schistaceâ: supracaudalibus schistaceis: axillaribus flavicantibus vel pallidè aurantiacis, subalaribus concoloribus.

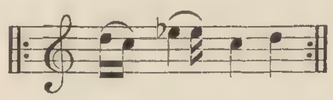
This species is the Brazilian and Bolivian representative of *T. tristis* and *T. leucauchen*, and Mr. Seebohm considered them to constitute three forms hardly to be distinguished, "which apparently interbreed, as every possible intermediate stage of plumage between them is found" (Cat. Birds Brit. Mus. v. p. 210). Judged, however, by the evidence of seasonal variation in the allied *Turdus leucauchen*, which has recently come to light from the series in the Salvin-Godman Collection, there can be little hesitation in admitting that *T. crotopezus* has really no connecting-links with either *T. leucauchen* or *T. tristis*, but, on the other hand, is a perfectly distinct species, distinguished by its grey upper tail-coverts and tail, and russet-brown back.

The range of the species appears to be from Eastern Brazil to Bolivia and Peru. The British Museum contains many specimens from the neighbourhood of Bahia, and in the same Collection are specimens from Tilotilo and the Rio Toro, in Bolivia, obtained by Buckley. I can see no difference between examples from these distant localities, and the supposition is that the species occurs in the intervening countries. On this point, however, no exact evidence seems to be forthcoming. Von Pelzeln unites *T. crotopezus* to *T. leucomelas*, and it is only by an examination of the specimens in the Vienna Museum that one can find out whether the *T. leucomelas* of the 'Ornithologie Brasiliens' is *T. crotopezus* or not. That the bird described in the present work is the true *T. crotopezus* is certified by the comparison of a specimen in the Sclater Collection with the actual type in the Berlin Museum.

Mr. Seebohm, in the 'Catalogue of Birds in the British Museum,' gives the range of *T. crotopezus* as extending to Rio de Janeiro, but this is probably on the authority of Euler's note (J. f. O. 1867, p. 404) on the birds of Cantagallo. Euler's *Turdus crotopezus* has, however, been shown by Dr. Cabanis (J. f. O. 1864, p. 82) to be *Turdus albicollis*.

There have been but few authentic notes published on this species, and very little has been written on its habits. Prince Maximilian states that he found this Thrush in the dense woods of the coast-region of Brazil, and that it resembled other Thrushes in its habits. He did not notice its song.

According to Taczanowski (Orn. Pérou, i. p. 492) this species was obtained by Jelski at Amable Maria in Peru, and by Stolzmann at Huambo, Chirimoto, and Tambillo. The latter writes:—"This Thrush sings generally in the same place, in a group of thick trees, where it is difficult to observe it. The song is melancholy, and is heard by the hour together. It can be rendered as follows:—



At Huambo there was an individual, evidently a young bird, trying to learn its song, and one could hear it every day in the same place. He was not, however, very successful, and the soft *e* was

impossible for him to render correctly, and he generally took it quite wrongly and in a half-tone, and he then repeated many times in succession the last two notes (*c* and *d*). He also did not know how to keep time, dragging or quickening the notes without any sense. Some of the birds modified their song by leaving out the first *d* and beginning with the simple *c*."

Adult. General colour above warm russet-brown, from the neck to the rump, the longer upper tail-coverts inclining to slaty-grey like the tail; wing-coverts and innermost secondaries like the back; bastard-wing, primary-coverts, and quills sepia-brown, externally russet-brown like the back; crown of head slightly more dingy than the back; lores and sides of face entirely dusky brown, with a shade of ashy on the lores and above and behind the eye; throat and cheeks white, streaked with broad lines of triangular black spots, which form a broad band along the malar region, confining the white cheeks to a narrow line; on the lower throat a conspicuous patch of pure white, unspotted; fore-neck and breast light ashy-grey; the centre of the breast and abdomen whiter, the under tail-coverts being pure white, with concealed dusky bases, and with scarcely a trace of dusky margins on any of the feathers; sides of body clear brown, with a slight ochreous shade; thighs ashy-brown; under wing-coverts and axillaries very pale orange-buff; the coverts round the bend of the wing and the lower primary-coverts more ashy; quills dusky brown below, ashy along the inner webs, which have a faint tinge of buff near the base: "bill black; feet dark grey; iris hazel" (*Stolzmann*): "upper mandible blackish-brown, lower mandible yellow; feet fleshy-brown; iris greyish-brown; eyelid yellow" (*Neuwied*). Total length 8 inches, culmen 0·8, wing 4·5, tail 3·25, tarsus 1·25.

According to Seebohm (*l. c.*) the fifth primary is the longest, the second primary between the sixth and seventh, and the bastard-primary measures from 1·1 to 0·8 inch.

The specimen described is in the British Museum, from Bahia, and the example figured on the same Plate with *T. tristis* is a Bahia skin in the Seebohm Collection. [R. B. S.]

TURDUS ALBICOLLIS, *Vieill.*

ORANGE-SIDED WHITE-THROATED THRUSH.

Turdus albicollis, Vieill. N. Dict. d'Hist. Nat. xx. p. 227 (1818); Scl. & Salv. Exot. Orn. p. 141, pl. lxxi. (1868); Seebohm, Cat. Birds Brit. Mus. v. p. 210 (1881).
Turdus crotopezus (nec Licht.), Euler, J. f. O. 1867, p. 404; Cab. J. f. O. 1874, p. 82.

T. plagâ gulari conspicuâ albâ: caudâ cinereâ: supracaudalibus cinereis: axillaribus et subalaribus lætè aurantiacis: hypochondriis quoque lætè aurantiacis.

This species is easily distinguished from the rest of the White-throated American Thrushes by its bright orange flanks and orange under wing-coverts and axillaries.

It is an inhabitant of Brazil, and appears to be not uncommon in the Rio de Janeiro province, whence the British Museum has received specimens in the collection presented by Mr. Alexander Fry. Mr. Euler met with the species at Cantagallo, where it is resident and breeds. It is not, however, so common there as *Turdus rufiventris*, but has the same habits and mode of life as that species, frequenting the same localities. In Rio de Janeiro *T. albicollis* was obtained by the celebrated traveller Natterer in June and in December; he also met with it in the forests of Registo do Sai in April, and at Ypanema in February and March (Pelz. Orn. Bras. p. 93). Herr Konigswald records it in his list of the birds of San Paulo (J. f. O. 1896, p. 345). Count von Berlepsch has received specimens from Santa Catharina from Mr. J. Schlüter (J. f. O. 1873, p. 229), and Dr. von Ihering has procured it at Taquara, in Rio Grande do Sul (Berl. & Ihering, Zeitschr. ges. Orn. ii. p. 16).

Burmeister states that the species is found in the brushwood in the interior of Minas Geraes, and is much more arboreal in its habits than *T. leucomelas*. A specimen was procured by his son near Lagoa Santa (Syst. Uebers. Th. Bras. iii. p. 125).

Mr. and Mrs. Herbert Smith met with this Thrush at Chapada in Matto Grosso, from June to October, and procured a half-grown fledgeling on the 23rd of November, 1882. A set of three eggs, taken on the 28th of October by the above-named travellers, are described by Prof. J. A. Allen as follows:—"They measure 1·08×·80 inch, 1·05×1·82, 1·09×·82. The ground-colour is bluish-white, thickly sprinkled with fine dots of reddish, with very large patches of the same colour, sometimes nearly covering the larger end, mixed with similar blotches of lilac-brown" (Bull. Amer. Mus. Nat. Hist. iii. p. 340).

Adult. General colour above russet-brown, fading off slightly into olive towards the rump; long upper tail-coverts slaty-grey like the tail; wing-coverts and innermost secondaries like the back; bastard-wing, primary-coverts, greater coverts, and quills sepia-brown, externally washed with russet-brown like the back; the head rather more dusky than the back, the sides of the face also being dusky brown, with a slight tinge of ashy behind the eye and over the lores; sides of neck verging into the colour of the back; cheeks dusky brown, scarcely mottled with a few spots of white; throat white, broadly streaked with triangular lines of black spots; on the lower throat a large patch of white, unspotted; fore-neck and breast pale ashy, ruddy-brown on the sides of the upper breast; centre of breast and abdomen greyish-white, becoming pure white on the lower abdomen and under

tail-coverts, the latter with concealed dusky bases, but with scarcely any evidence of dusky lateral margins; sides of body bright orange-rufous; thighs pale ashy; under wing-coverts and axillaries bright orange-buff, the coverts round the bend of the wing ashy; quills dull ashy below, with a slight shade of ashy-buff along the inner webs. Total length 9·5 inches, culmen 0·85, wing 4·7, tail 3·35, tarsus 1·2.

A female specimen from Matto Grosso, described by Prof. J. A. Allen, is said to be much browner than the male, the head being nearly uniform with the back, and with the throat-markings brownish instead of deep black.

The nestling is also described by Prof. Allen:—"The half-fledged bird has the upper surface much darker than in the adult, with the scapulars and interscapulars obscurely tipped with blackish, and with conspicuous shaft-stripes of pale chestnut; wing-coverts also with shaft-stripes of the same colour. Below blotched with broad cross-bars of blackish, the breast and sides pale yellowish-brown, the middle of the abdomen white."

The description is taken from a specimen in the British Museum, and the figures on the Plate are drawn from a bird from S.E. Brazil in the Seebohm Collection. [R. B. S.]

TURDUS GYMNOPHTHALMUS, *Cab.*

BARE-EYED THRUSH.

Turdus gymnophthalmus, Cab. in Schomb. Reis. Guian. iii. p. 665 (1848); Scl. & Salv. Exot. Orn. p. 151, pl. lxxvi. (1869); Seebohm, Cat. Birds Brit. Mus. v. p. 212 (1881).
Turdus nudigenis, Lafr. Rev. Zool. 1848, p. 4.
Turdus gymnopsis, Temm. MS., Bp. Consp. i. p. 272 (1850).
Turdus albiventris (nec Spix), Scl. P. Z. S. 1859, p. 136.
Turdus caribbæus, Lawr. Ann. New York Acad. Sci. i. p. 160 (1878).
Turdus gymnogenys, Scl. & Salv. Ibis, 1879, p. 357.
Merula gymnophthalma, Stejn. Pr. U.S. Nat. Mus. v. p. 473 (1883); Cory, List B. West Indies, p. 5 (1885).
Merula caribbæa, Cory, Ibis, 1886, p. 472.

T. plagâ gulari albâ nullâ: remigibus infrà obscurè brunneis, vix intùs cinerascenti-fulvo adumbratis: pectore medio abdomineque albis: subalaribus et axillaribus dilutè aurantiaco-fulvis: regione ophthalmicâ nudâ, flavâ.

This Thrush is easily recognized by the bare yellow space round the eye. This character, however, varies in individuals, and is much more extensive in some specimens than in others, and appears to me to be more developed in the breeding-plumage.

It is a bird of wide range in South America, and was first described from British Guiana by Prof. Cabanis (Schomb. Reis. Brit. Guian. iii. p. 665), who also records it from Cayenne from specimens in the Berlin Museum. Dr. Sclater has also received it from Surinam (P. Z. S. 1859, p. 329).

Whitely obtained several specimens at Quonga, in British Guiana, in October and November, and again on Roraima at 3500 feet in the same months (Salvin, Ibis, 1885, p. 198).

Dyson met with the species near Caracas in Venezuela (spec. in Mus. Brit.), and Prof. Cabanis also notices it from the same locality (*l. s. c.*). A specimen obtained by Hanke near San Esteban is in the Sclater Collection. From Caracas came also the type of Lafresnaye's *Turdus nudigenis* (Rev. Zool. 1848, p. 4). In Trinidad it is reported as a common resident by Léotaud (Ois. Trinid. p. 201), by Mr. E. Cavendish Taylor (Ibis, 1864, p. 80), and by Mr. Frank M. Chapman (Bull. Amer. Mus. Nat. Hist. vi. p. 22).

The species is recorded from Tobago by Dr. Sclater, having been obtained there by Kirk (P. Z. S. 1859, p. 329), and there is a specimen from this island in the Seebohm Collection. It also occurs on St. Vincent and Grenada, examples from both of these islands being in the Salvin-Godman Collection.

The late Mr. G. N. Lawrence separated the Bare-eyed Thrush from Grenada as *Turdus caribbæus*. He gives the following note in the 'Proceedings' of the U.S. National Museum (ix. p. 610):—"This is considered by Messrs. Sclater and Salvin not to differ from *T. gymnophthalmus*. I have three specimens of the latter bird, one of them presented to me by Mr. Seebohm. These are smaller in their dimensions than the bird from Grenada, which has a perceptibly

smaller bill; the feathers of the tail are broader and darker in colour; the under wing-coverts are of a lighter pale salmon, and the inner margins of the quills are more cinereous, are less tinged with salmon colour, and the upper plumage is slightly darker in colour than in my specimens of *T. gymnophthalmus*."

I am unable to see any specific characters for the separation of *T. caribbæus* myself, and Mr. Cory has united Lawrence's species to *T. gymnophthalmus* (Cat. West Ind. B. p. 122). It should, however, be noted that there is apparently a difference in the colour of the "iris" between the Grenada and the continental birds (*vide infrà*).

Specimens from Bogotá are in the Salvin-Godman and Seebohm Collections, but I have not yet seen any from Peru. A specimen from Pallatanga in Ecuador, obtained by Fraser, is in the Salvin-Godman Collection; it is doubtless this specimen which was determined by Dr. Sclater as *T. albiventris* in 1859 (*l. c.*). Prof. J. A. Allen, however, records the species as having been obtained by Dr. Rusby in the province of Yungas in Bolivia (Bull. Amer. Mus. Nat. Hist. ii. p. 78).

In Trinidad, according to Léotaud, "it is common everywhere and permanently resident; being, however, most frequently met with in the vicinity of habitations. It feeds in flocks, principally on berries, and in the evening makes its presence known by a song, which is more remarkable for variety than for sweetness. For its roosting-place it usually selects the small palm-trees which grow in damp situations, where the arrival of each additional member of the flock is greeted with a cackling, which does not cease until darkness sets in. It is of a shy nature, but nevertheless enters the court-yards of the houses to feed on the berries of the trees, in this respect resembling the Blackbird of Europe. The gourmands of Trinidad highly appreciate this Thrush, particularly at the season when it feeds on certain aromatic berries."

Mr. Frank Chapman writes as follows:—"Common in Trinidad near the borders of the forests and in partial clearings. They are shy, suspicious birds, and some caution is necessary in approaching them. In general appearance they are typically Thrush-like, and their manner of flirting their tail on alighting is exactly like that of our Robin (*Merula migratoria*). Their ordinary call-note is a low *châ*, quite unlike the call of any Thrush with whose notes I am familiar. They began to sing on April 6, and in a few days were in full song. The latter is so like that of our Robin, that if it was heard in the habitat of that species it would pass as a slightly aberrant Robin's song. It is not quite so loud as the song of the Robin, is lacking in variety, and is sung less continuously, but the character is the same."

Mr. Ober writes from Grenada:—"I am positive that I heard this bird in St. Vincent, but only once, and did not obtain or even fairly see it. Its cry is peculiar and, when once heard, could not be mistaken. It resembles the cry of the Whippoorwill in the morning, just as it utters the 'poor-will,' and just preceding the final cluck. It was not a stretch of the imagination, either, to fancy a cry like 'how de dew' (as uttered by the country gentleman when saluting an acquaintance), with the stress upon *dew*. It has also, when alarmed, or when threading a strange thicket, the soft call-note of the Thrushes, similar to that of the *Grive* or Mountain Thrush. It inhabits the thick growth of old pastures, and seems to prefer the dark recesses beneath the overhanging trees and bushes of the hill-sides on the borders of the opens."

Dr. John Grant Wells says that in Grenada this Thrush is "abundant everywhere from the coast to the borders of the mountains, frequenting the cocoa-fields and mango-trees, feeding on 'figeur' and other wild berries: it is also frequently seen on the ground, scratching amongst the dead leaves for insects and larvæ; hence it is often caught in springes set for the Perdrix. It has several very melodious notes, and also an alarm-note or 'cluck.' Its nest is generally placed in the fork of the cocoa (*Theobroma*), and is rather a rude and bulky structure, composed of dry roots and mud, with no soft lining for the eggs, which are three in number, of a pale green, thickly spotted

with brown. They measure 1·06 inch by 0·80 inch, 1·16 by 0·80, and 1·12 by 0·82" (Proc. U.S. Nat. Mus. ix. p. 610).

Adult male. General colour above olive-brown, with a slight ashy tint, especially towards the rump and upper tail-coverts; the tail dark sepia-brown, distinctly washed with ashy; wing-coverts like the back; bastard-wing, primary-coverts, and quills sepia-brown, washed externally with ashy-olive; crown of head like the back; sides of face and ear-coverts dusky olive-brown, a little more dusky on the lores, the cheeks with hardly any white spots; chin and upper throat dull white, narrowly streaked with triangular spots of dusky brown; lower throat, fore-neck, breast, sides of body, and thighs uniform dull earthy-brown, slightly tinged with olive; abdomen and under tail-coverts white, the latter with brown margins near the base; axillaries and under wing-coverts very pale orange-buff, the coverts round the bend of the wing ashy-brown; quills dark sepia-brown below, with a slight tinge of ashy-buff along the inner webs: "bill and feet very clear brown; iris dark brown; bare space round the eye yellow" (*Léotaud*). Total length 8·5 inches, culmen 0·9, wing 4·9, tail 3·6, tarsus 1·2.

It must be noticed that Mr. Ober gives the colour of the iris as "wine-red" and the bill as "olive-green, tipped with yellow." As the bill in preserved specimens is parti-coloured, it seems probable that the latter description is correct.

The olive-backed specimens I believe to be birds in freshly moulted plumage, for it is evident that the olive tint becomes abraded and the general tone of the upper parts fades to a dull earthy-brown, while the underparts are similarly affected, and the colour of the breast and flanks becomes decidedly paler and clearer brown.

Young birds have the same colours as the adults, but have mesial shaft-streaks of buff on the feathers of the upper parts, while the wing-coverts have small spots of orange-buff at the tips; the bare eye-patch is well-marked, but the bill is entirely horn-colour, though paler towards the end; the throat and under surface of the body are mostly buff, a little more orange on the chest, which is obscured by dusky brown edges to the feathers; the abdomen is ashy-whitish, the under tail-coverts being buffy-white with the outer web almost entirely brown.

The descriptions have been taken from specimens in the British Museum, and the species is figured on the same Plate as *T. leucomelas* from a Guiana specimen in the Seebohm Collection.

[R. B. S.]

TURDUS LEUCOMELAS, *Vieill.*

DUSKY THRUSH.

Zorzal olscuro y blanco, Azara, Apunt. i. p. 341, no. lxxx. (1802).
Turdus leucomelas, Vieill. N. Dict. d'Hist. Nat. xx. p. 238 (1818); Scl. & Salv. Exot. Orn. p. 143, pl. lxxii. (1868); Seebohm, Cat. Birds Brit. Mus. v. p. 213 (1881).
? *Turdus olivaceus* (nec Linn.), Lafr. & d'Orbigny, Mag. de Zool., Syn. Av. 1837, p. 17.
? *Turdus rufiventris* (nec V.), d'Orbigny, Voy. Amér. Mérid. iv. pt. 3, p. 203 (1840).
Turdus amaurochalinus, Cab. Mus. Hein. i. p. 5 (1850).
Planesticus amaurochalinus, Bp. C. R. xxxviii. p. 3 (1854).
Turdus albiventris (nec Spix), Scl. P. Z. S. 1858, p. 451.
Turdus crotopezus (nec Licht.), Burm. Syst. Uebers. iii. p. 123 (1856); id. Reis. La Plata-St. ii. p. 474 (1861).
Turdus albicollis (nec V.), Euler, MSS. no. 224 (*teste* Cab. J. f. O. 1874, p. 82).

T. plagâ gulari albâ minùs conspicuâ: pedibus nigricantibus: pectore et hypochondriis pallidè cinerascentibus vel brunneis: rostro in ptilosi æstivâ flavo, in ptilosi hiemali vel hornotinâ nigricante: plagâ nudâ oculari nullâ: gutture distinctè nigro striolato.

This species is widely distributed in South America. It is common near Buenos Ayres and breeds there, though Mr. Hudson believes that the species is also a partial migrant (Scl. & Hudson, Argent. Orn. i. p. 1). Specimens were sent from Conchitas by Mr. Hudson (Scl. & Salv. P. Z. S. 1868, p. 138), and Mr E. W. White has recorded the species from Concepcion in Misiones and Santo Tomo in Corrientes (P. Z. S. 1882, p. 592), while Mr. Withington has also forwarded specimens from Lomas de Zamora (Ibis, 1888, p. 462), where he says that it is fairly plentiful in winter and spring. Herr Frenzel has noticed it in the Province of Cordova (J. f. O. 1894, p. 117), and Dr. Borelli obtained it at Santa Rosa in Salta (Salvad. Boll. Mus. Torino, x. p. 2).

The range of the species is said to extend to Mendoza by Burmeister (Reis. La Plata-St. ii. p. 474). In the British Museum are two skins said to be from Chili. They were received from the Zoological Society many years ago; but there seems to be at present no warrant for supposing that the species is found in Chili proper, and it is omitted in Mr. Berkeley James's list of the birds inhabiting the last-named country.

In Uruguay Mr. O. V. Aplin states that he found the species rather common in the monte of the Rio Negro in December (Ibis, 1894, p. 161). The British Museum contains a specimen from Paysandu, procured by Mr. Alan Peel in August. Mr. Barrows says that the species was abundant at Concepcion all the year round, but was not observed at Azul nor at any of the points further south (Bull. Nutt. Orn. Club, viii. p. 85). From Paraguay came Azara's original account of the species, and Dr. Borelli met with it at Villa Ricca in Central Paraguay (Salvad. Boll. Mus. Torino, x. p. 2). Mr. Graham Kerr found it on the Lower Pilcomayo (Ibis, 1892, p. 122).

It seems to be of wide range in Brazil. Dr. Ihering obtained specimens at Taquara in Rio Grande do Sul, in February, July, and August (Berlepsch & Ihering, Zeitschr. ges. Orn. ii. p. 16,

1885). An example procured at Pelotas is also in the Salvin-Godman Collection, as well as one from the province of Santa Catharina obtained by Mr. H. Rogers. From Rio de Janeiro the British Museum has specimens presented by Mr. Alexander Fry, and Natterer procured several in the province of San Paulo, at Sapitiba in May, November, and December, at Goyaba in January, Ypanema from April to November, and at Curytiba in October (Pelz. Orn. Bras. p. 93). Burmeister says that it also occurs not rarely near Lagoa Santa (Th. Bras. iii. p. 123).

Natterer also met with the species near the city of Goiaz in August (Pelz. Orn. Bras. p. 93), and it is evidently common near Bahia, as the British Museum has many specimens from this locality.

The birds procured by Natterer at Forte do Rio Branco in November (Pelz. Orn. Bras. p. 93), as shown by one of them kindly lent to me by Dr. Lorenz of the Vienna Museum, turn out to be *T. gymnophthalmus*. The examples recorded from the Ucayali River and Upper Amazonia appear to me to be referable to *T. maculirostris*.

A specimen said to have come from Cayenne is in the Sclater Collection.

Whether this is the *Turdus olivaceus* of Lafresnaye and d'Orbigny, from the province of Yungas in Bolivia, I am unable to say, but Bolivian specimens are in the British Museum, and here the ranges of *T. leucomelas* and *T. maculirostris* appear to coalesce.

Mr. W. H. Hudson (Argent. Orn. i. p. 1) gives the following notes on the species:—"The Dusky Thrush is widely distributed in South America, and ranges as far south as Buenos Ayres, where it is quite common in the woods along the Plata River. It is a shy forest-bird; a fruit- and insect-eater; abrupt in its motions; runs rapidly on the ground with back elevated, and at intervals pauses and shakes its tail; pugnacious in temper; strong on the wing, its flight not being over the trees, but masked by their shadows. It can always be easily distinguished, even at a distance, from other species by its peculiar short, metallic chirp—a melodious sound indicating alarm or curiosity, and uttered before flight—in contrast to the harsh screams and chuckling notes of other Thrushes in this district.

"Whether it is a fine singer or not within the tropics I am unable to say, its vocal powers having received no attention from the naturalists who have observed it. With us in the temperate climate of Buenos Ayres, where it commences to sing in September, it has the finest song of any bird I know, excepting only *Mimus triurus*. Like the English Song-Thrush, but unlike its near neighbours the Red-bellied Thrush and the Magellanic Thrush, it perches on the summit of a tree to sing. Its song is, however, utterly unlike that of the English bird, which is so fragmentary, and, as Mr. Barrows describes it, made up of 'vocal attitudes and poses.' The two birds differ also in voice as much as in manner. The strains of the Dusky Thrush are poured forth in a continuous stream, with all the hurry and freedom of the Sky-Lark's song; but though so rapidly uttered, every note is distinct and clear, and the voice singularly sweet and far-reaching. At intervals in the song there recurs a two-syllabled note twice repeated, unlike in sound any othe bird-music I have heard, for it is purely metallic, and its joyous bell-like '*te-ling te-ling*' always comes like a delightful surprise to the listener, being in strange contrast with the prevailing tone. The song is altogether a very fine one, its peculiar charm being that it seems to combine two opposite qualities of bird-music, plaintiveness and joyousness, in some indefinable manner. I have never heard this species sing in a cage or anywhere near a human habitation; and it is probably owing to its recluse habits that its excellent song has not been hitherto noticed. Azara perhaps mistook the song of this species for that of *Turdus rufiventris*, a very inferior vocalist.

"The nest is made in the centre of a thick bush or tree six or eight feet from the ground, and is a deep elaborate structure, plastered inside with mud, and lined with soft dry grass. The eggs are four in number, oblong: the ground-colour light blue, abundantly marked with reddish-brown spots.

"This Thrush has, I believe, a partial migration in Buenos Ayres. In the autumn and winter I have frequently observed it in localities where it is never seen in summer."

The accompanying observations are given by the late Mr. Henry Durnford in his paper on the Birds of Buenos Ayres (Ibis, 1877, p. 166):—"Resident. In the winter to a great extent gregarious, and common always in the belt of trees and scrub which fringe the shore of the La Plata, preferring low land to a more elevated district. There is a fact about the note of this bird that I am anxious to record. Everyone in England is familiar with the subdued but querulous chuckle of the Blackbird, which it almost invariably utters before leaving the friendly shelter of a thick bush. Now, though *Turdus leucomelas* has scarcely any song, certainly nothing that can be compared with that of a Blackbird, it has exactly this same peculiar note, and utters it under precisely the same conditions as the Blackbird; and so much did this coincidence strike me, that I thought when I first heard the sound that an escaped Blackbird was the author of it. I look upon this as one of the many isolated facts which seem to prove descent from a common progenitor. Common at Baradero in April."

Mr. Barrows (Bull. Nutt. Orn. Club, viii. p. 85, 1883) writes from Uruguay:—"This bird abounds at Concepcion all the year round, and was taken also at Buenos Aires. It was not observed either at Azul or any of the points further south. It is found in the gardens of the town, as well as in the depths of the swampy woods, but never seen far from leafy cover of some kind, and does not appear at home on the ground. It is very unsuspicious, and is frequently caged and becomes reconciled to its imprisonment, yet is not very musical. The nest is usually well hidden among the tops of bushes or masses of twining plants, never more than ten feet from the ground, and resembles in general the nest of our own Robin (*T. migratorius*), but is smaller and contains no mud in its composition, so far as my observation goes. The eggs, commonly four, are splashed and dotted with several shades of brown on a dirty green ground. Sets were taken through October and November, and frequently the eggs of the Cowbird were found with them."

Mr. O. V. Aplin, in his paper on the Birds of Uruguay (Ibis, 1894, p. 161), observes:—"I saw one in the quinta at Santa Elena on the 22nd of October, just after my arrival, and before my luggage, with my cartridges, had come up country, but did not meet with the adult again in that neighbourhood; however, on the 22nd of February, I shot a Thrush in nestling dress in thin monte on the coast of the Monzon, which Mr. Sclater believes to be of this species. In the monte of the Rio Negro I found the Dusky Thrush rather common, but excessively shy and retiring, and very difficult to see—betraying its presence usually only by its low, sweet alarm-note, like that of our Song-Thrush when disturbed among the fruit-trees. They were not at that time (mid-December) in song."

Mr. E. W. White states that he found the species in the woods around the old Jesuit ruins in Misiones. He says that it has a pleasant whistle and is often kept as a cage-bird.

Adult. General colour above dark olive-brown, with a slight wash of olive, especially towards the rump and upper tail-coverts, the latter being dull sepia-brown like the tail, washed with dull slaty-grey; wing-coverts like the back; bastard-wing, primary-coverts, and quills sepia-brown, externally washed with ashy-olive; crown of the head and sides of face like the back, blackish in front of the eye; the cheeks scarcely at all streaked with white; throat white, distinctly streaked with rows of black triangular spots; the lower throat not spotted, so that there is a small patch of plain white; fore-neck, breast, and sides of body dark ashy-brown, as also the thighs; abdomen and under tail-coverts whitish, the latter with broad lateral edges of dark brown; axillaries and under wing-coverts very pale buff, with only a faint tinge of orange, which also pervades the inner aspect of the quills, which are dusky brown below: bill yellow; "iris brown" (*Burmeister*). Total length 8·5 inches, culmen 0·9, wing 4·7, tail 3·6, tarsus 1·3.

The yellow bill is a sign of an old bird in nesting-plumage. The pale orange tint on the

axillaries fades as the plumage gets worn, and these are often pale ashy like the sides of the body. Both the upper parts and the breast become greyer and paler during the breeding-season.

In winter plumage the bill is dark brown or horn-brown, generally with a little yellow on the lower mandible, but there is a distinct buff shade on the throat, pervading also the breast and sides of the body. The upper surface is also distinctly browner: "feet slate-colour; iris dark brown" (*H. Durnford*).

Young birds are rather darker olive-brown than the adults, and have longitudinal buff streaks to the feathers of the head and back; the throat is white with a few black spots, but a very distinct white gular patch, as in the adults; the lower throat and fore-neck are buff, broadly barred with black tips to the feathers, and the sides of the body are also light tawny-buff, more narrowly barred with blackish.

The figure in the Plate is drawn from a Bahia skin in the Seebohm Collection, and the descriptions are taken from the series in the British Museum. [R. B. S.]

TURDUS MACULIROSTRIS, *Berl.*

ECUADORIAN DUSKY THRUSH.

? *Turdus olivaceus* (nec Linn.), Lafr. et d'Orb. Syn. Av., Mag. de Zool. 1837, p. 17.
? *Turdus rufiventris* (nec Vieill.), d'Orb, Voy. Amér. Mérid. iv. part 3, p. 203 (c. 1840).
Turdus amaurochalinus (nec Cab.), Scl. & Salv. P. Z. S. 1866, p. 177, 1867, p. 749.
Turdus poiteaui, Pelz. Orn. Bras. p. 94 (1871, nec Less.).
Turdus leucomelas (nec Vieill.), Tacz. P. Z. S. 1874, p. 503.
Turdus ignobilis (nec Scl.), Tacz. P. Z. S. 1882, p. 4; id. Orn. Pérou, i. p. 491 (1884).
Turdus ignobilis maculirostris, Berl. P. Z. S. 1883, p. 538.

T. similis *T. leucomelani*, et rostro in ptilosi æstivâ flavo, in ptilosi hiemali et in ave hornotino nigricante: minor: pallidior: plagâ gulari albâ obsoletâ: gutture obsoletè brunneo striato.

Count von Berlepsch described this species in 1883 from two specimens obtained by Messrs. Stolzmann and Siemeradski at Chimbo, in Western Ecuador, in September 1882. The following is a translation of his original description and remarks:—"Very closely allied to *T. ignobilis*, Scl., but differs in the apical half of the bill being yellow; the colour, especially of the breast, paler; the back, as well as the wings and outer aspect of the tail, more olive; the under tail-coverts more spotted with brown.

"The birds in the Sclater Collection, obtained by Fraser in Western Ecuador, show the same colour of the bill as our specimens from Chimbo; this distinctive character, therefore, appears to be constant. I have not seen examples from Eastern Ecuador, but Bogotá birds have always an entirely black bill.

"The specimens from Central Peru (Amable Maria) and from Northern Peru (Chirimoto and Huambo) have always a wholly dark bill, and a patch of white sufficiently pronounced at the bottom of the throat, as it is in *T. leucomelas* of Brazil; but this does not appear to be constant, for in a female from Huambo this white patch is absent, and the colour of the upper parts of the body in these birds is less olive and distinctly darker than in the birds from Western Ecuador."

T. maculirostris, as represented by specimens in the British Museum, seems to be a small race of *T. leucomelas*, extending from Ecuador to Upper Amazonia, Peru, and Bolivia. The examples procured by Natterer at Salto Theotonio on the Rio Madeira, and named *T. poiteaui* by Pelzeln (Orn. Bras. p. 94), are referable to this species, as I have determined by a personal examination of the skins, which Dr. von Lorenz was so good as to forward to me.

The adult bird in nesting-plumage has a yellow bill, while the younger individuals and the adults in winter plumage have blackish bills. Count von Berlepsch must have described individuals in process of change from winter to summer plumage, when the bill changes from black to yellow. In these respects the alliance with *T. leucomelas* is distinctly indicated. Some individuals from Peru show the white throat-spot quite plainly, but in other examples in the Museum this spot is scarcely

traceable or is absent altogether, and, as far as I can see, is only visible in winter plumage. Still its occasional presence is another sign of affinity with *Turdus leucomelas*, though the general aspect of the bird is very like that of *T. ignobilis*. The streaks on the throat are more defined than in *T. ignobilis*, but are never so distinct as in *T. leucomelas*.

I have examined the following specimens, which I believe to be referable to *T. maculirostris*:—

Ecuador.		
a. Ad. hiem.	Rio Napo (*Jameson*: *Jardine Coll.*).	Seebohm Coll.
b, *c*. Ad. æstiv.	Balzar Mountains (*Illingworth*).	Salvin-Godman Coll.
d, *e*. Ad. hiem.	Sarayacu (*C. Buckley*).	Salvin-Godman Coll.
f. ♂ ad. hiem.	Pallatanga (*L. Fraser*).	Sclater Coll.
g. Ad. hiem.	Pallatanga (*L. Fraser*).	Eyton Coll.
h. ♂ ad. hiem.	Zamora (*L. Fraser*).	Sclater Coll.
i. Juv.	Santa Rita (*Villagomez*).	Salvin-Godman Coll.
Peru.		
k. ♀ juv. hiem.	Guayabamba, 3800 feet, Aug. 23, 1894 (*O. T. Baron*).	Salvin-Godman Coll.
l. ♀ ad. hiem.	Chirimoto, Sept. 1880 (*J. Stolzmann*).	Sclater Coll.
Upper Amazonia.		
m. ♀ ad. hiem.	Lower Ucayali.	E. Bartlett [C.].
n. ♀ ad. hiem.	Xeberos, June 14, 1866.	E. Bartlett [C.].
o. ♂ ad. hiem.	Yquitos, Oct. 24, 1878 (*H. Whitely*).	Seebohm Coll.
Bolivia.		
p. Ad. æstiv.	Mapiri (*C. Buckley*).	Salvin-Godman Coll.
q. Juv.	Baganti (*C. Buckley*).	Salvin-Godman Coll.

T. maculirostris may therefore be described as a small dark race of *T. leucomelas*, having a yellow bill, but distinguished by its paler ashy-brown breast and flanks and by the feebly indicated dusky streaks on the throat. Total length 8·5 inches, culmen 0·9, wing 4·35, tail 3·2, tarsus 1·25.

Adults and young birds in winter plumage have a blackish bill, and may be distinguished from the corresponding plumages of *T. leucomelas* by the darker olive-brown of the upper surface, as well as by the darker brown colour of the breast and flanks. The streaks on the throat are also much less pronounced than in *T. leucomelas*. A female measures:—Total length 8·5 inches, culmen 0·8, wing 4·2, tail 3·2, tarsus 1·15.

There is not so much difference in size between *T. maculirostris* and *T. leucomelas* as would appear from the generally smaller appearance of the former species.

T. leucomelas has the wing varying from 4·3 to 4·85 inches, and there does not seem to be any marked differences in the sexes, though the male is slightly the larger.

In *T. maculirostris* the males have the wing from 4·3 to 4·5 inches, and the females from 4·15 to 4·2 inches. [R. B. S.]

TURDUS IGNOBILIS, *Scl.*

COLOMBIAN DUSKY THRUSH.

Turdus ignobilis, Sclater, P. Z. S. 1857, p. 273; Seebohm, Cat. Birds Brit. Mus. v p. 214 (1881).

T. plagâ gulari albâ nullâ: pectore et corporis lateribus cinerascenti-brunneis: gutture quoque cinerascente, obsoletè brunneo striato: rostro nigricante.

Although in some respects closely allied to *T. leucomelas* and *T. maculirostris*, the Colombian Dusky Thrush must be recognized as a distinct species. It is to be told by its dingy throat from both of the above-named forms, as the characteristic dark streaks, very pronounced in *T. leucomelas*, less so in *T. maculirostris*, become almost obsolete in *T. ignobilis*. Added to this character, there is a second one of prime importance, viz. the black bill. This never seems to get yellow, and in the Salvin-Godman Collection is a breeding female procured by Salmon at Medellin, "with eggs." This has a black bill, and practically proves that *T. ignobilis* never has a yellow bill in the breeding-season.

The range of the species seems to be confined to Colombia. The type came from Bogotá, and Salmon obtained specimens from Antioquia (Scl. & Salv. P. Z. S. 1879, p. 491). All the references to *T. ignobilis* from other localities undoubtedly belong to some other species.

A female from Medellin in the Salvin-Godman Collection measures as follows:—Total length 9·3 inches, culmen 0·8, wing 4·65, tail 3·7, tarsus 1·25. [R. B. S.]

TURDUS MURINUS, *Salvin.*

RORAIMA DUSKY THRUSH.

Turdus murinus, Salvin, Ibis, 1885, p. 197.

T. similis *T. ignobili*, et plagâ gulari albâ nullâ, sed saturatior, præpectore et hypochondriis præcipuè saturatè brunneis: rostro nigro.

This is a very dark form of *T. ignobilis*, with which Seebohm considered it to be identical. A comparison of a series, however, shows that the Guiana birds are very much darker than any of the Colombian ones. Specimens obtained by Whitely at different times of the year show certain tints of plumage caused by seasonal variation, but the bill is invariably blackish, and evidently never becomes yellow at any time of the bird's life.

The stripes on the throat are always most distinctly indicated, but the cheeks are uniform like the sides of the face. It is always a much darker bird, both in its breeding and winter plumages, than *T. ignobilis*. The axillaries are also browner than in that species.

The British Museum contains a large series of this species from British Guiana, obtained by Whitely on the Merumé Mountains in June, and on Roraima, at an altitude of 3500 to 5000 feet, in the months of June, August, September, October, November, December, and January. A specimen obtained by Jelski on the River Oyapock in Cayenne is in the Salvin-Godman Collection.

The adult male measures as follows:—Total length 9·4 inches, culmen 0·8, wing 4·65, tail 3·65, tarsus 1·25.

The adult female measures:—Total length 8·7 inches, culmen 0·8, wing 4·35, tail 3·55, tarsus 1·2.

Young. Distinguished from the adults in having fulvous spots at the ends of the wing-coverts; the throat distinctly streaked with blackish, and the fore-neck, breast, and sides of body obscured with dark brown bars across the ends of the feathers (*spec. in mus. Salvin-Godman*).

The specimen figured is in the Seebohm Collection and is from Roraima. The descriptions are taken from Roraima examples in the British Museum. [R. B. S.]

TURDUS COMORENSIS, *Milne-Edw. & Oust.*

COMORO-ISLAND THRUSH.

Turdus comorensis, Milne-Edwards & Oustalet, Comptes Rendus, ci. p. 221 (1885); iid. Nouv. Arch. Mus. (2) x. p. 251, pl. vi. fig. 2 (1888).

Professor Milne-Edwards and Dr. Oustalet, in describing this Thrush, remark on its affinities to *Turdus cabanisi* and *T. olivaceus*, as the two African species with which it may be compared, though its characters are recognized by them as being very distinct from these as well as from all other African Thrushes. With *T. bewsheri* it has apparently no relationship, and is more closely allied to the American Thrushes of the *T. ignobilis* type than to any African form.

The species is apparently confined to the island of Grand Comoro, where it was discovered by M. Humblot.

Adult. General colour above dark chocolate-brown, the wing-coverts like the back; bastard-wing, primary-coverts, and quills dark sepia-brown, externally washed with chocolate-brown; tail sepia-brown, with scarcely any shade of chocolate; head slightly more dusky than the back; sides of face uniform brown, with indistinct pale shaft-streaks to the ear-coverts; throat dull white, with faintly indicated streaks of triangular brown spots; fore-neck and breast umber-brown, as also the sides of the body, which have a slightly more reddish tinge; thighs brown like the flanks; centre of breast and abdomen white; under tail-coverts pale fawn-colour; under wing-coverts and axillaries dull orange; under surface of quills ashy-brown, slightly rufescent along the inner web. Total length 7·5 inches, culmen 1·85, wing 4·0, tail 2·75, tarsus 1·4.

Another specimen from Grand Comoro differs from the one described in being more olive above, and in being more shaded with olive below on the breast and sides of the body, the under tail-coverts being white, with distinct brown edges to the feathers. The stripes on the throat are more distinct in these olive-coloured individuals, which I consider to be probably in the winter plumage, while the russet-coloured birds are in the breeding-plumage.

The specimens described are in the British Museum, and the figure is taken from a bird in the Seebohm Collection. [R. B. S.]

TURDUS PLEBEIUS, *Cab.*

COSTA-RICAN THRUSH.

Turdus plebeius, Cab. J. f. O. 1860, p. 323; Salvin & Godman, Biol. Cent.-Amer., Aves, i. p. 17 (1879); Seebohm, Cat. Birds Brit. Mus. v. p. 215 (1881).
Merula plebeia, Ridgw. Proc. U.S. Nat. Mus. v. p. 494 (1883).

T. olivascenti-brunneus: plagâ albâ gutturali nullâ: remigibus intùs pallidè rufo, minimè aurantiaco, adumbratis: pectore medio et abdomine sordidè cinerascenti-brunneis, gutture concoloribus, hoc tamen obscurè brunneo striato: subalaribus sordidè brunneis, rufescente marginatis.

The present species is easily recognizable by its dark coloration below, the throat being scarcely distinguishable from the rest of the under surface, and the under tail-coverts also being very dark.

It has hitherto been supposed to be confined to Costa Rica, where Dr. von Frantzius discovered it in 1859. His localities are Dota, San José, and La Palma, and he records it as being an inhabitant of the mountain-forests at an altitude of from 3000 to 6000 feet. Mr. H. Rogers obtained it on the Volcano of Cartago and on Irazu, where Mr. C. C. Nutting found it common at a high altitude in February and March (Ridgway, Proc. U.S. Nat. Mus. v. p. 494). Carmiol's localities for the species were Grecia and Cervantes (Lawr. *l. s. c.*), and a specimen obtained by Mr. Underwood at Barba is in the collection of the Hon. Walter Rothschild.

Since the publication of the 'Biologia' in 1879, Messrs. Salvin and Godman have received several specimens from Mr. W. B. Richardson, who has considerably extended our knowledge of the habitat of the species. He has sent specimens from Guatemala, obtained in July in the Sierra de las Minas, and in Nicaragua he met with the species at Jali in May, at San Rafael de Norte in March, and at Matagalpa in May. He has also procured specimens on the Volcan de Tacana in Chiapas in March. Mr. Nelson (Auk, xv. p. 161) says that he met with the species at Pinabek, Chiapas, where it was rather common.

No notes on the habits or song of this interesting species appear to have been published.

Adult male. General colour above olive-brown, the head a little more dusky than the back; wing-coverts like the back; bastard-wing, primary-coverts, and quills sepia-brown, externally olive-brown like the back; tail-feathers a little more ruddy than the back, and washed with olive-brown like the latter; sides of face uniform olive-brown, with a slight ashy shade; under surface of body entirely dusky ashy-brown, the throat slightly greyer, with narrow rows of dusky-brown streaks; on the chest also some remains of brown shaft-streaks; abdomen slightly more ashy than the breast; under tail-coverts mottled, pale fulvescent, with dusky-brown centres, and a brown spear-shaped bar near the end, following sub-marginally the outline of the feather; under wing-coverts and axillaries brown, with rufescent margins; the edge of the wing and the lower primary-coverts brown; quills below sepia-brown, the inner webs slightly shaded with pale ashy. Total length 10 inches, culmen 1·9, wing 5·2, tail 3·85, tarsus 1·25.

The dusky shaft-lines on the breast are sometimes obsolete, and are most evident in specimens killed in March, but there is very little difference in a series of specimens killed in various months.

The sexes are alike, and the males have the wing 5·2–5·5 inches, and the females 5·0–5·5 inches, so that the males are scarcely any larger than the females. I have not seen a nestling of this species, but a bird procured by Mr. Richardson at San Juan del Norte on the 24th of March still retains some triangular buff tips to the wing-coverts: it is otherwise like the adults.

The description has been drawn up from a specimen obtained by Mr. H. Rogers in the Irazu district of Costa Rica, and now in the Salvin-Godman Collection. The bird figured is a Costa-Rican skin in the Seebohm Collection. [R. B. S.]

TURDUS OBSOLETUS, *Lawr.*

PANAMA THRUSH.

Turdus obsoletus, Lawr. Ann. Lyc. N. York, 1862, p. 470; Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 19 (1879); Seebohm, Cat. Birds Brit. Mus. v. p. 218 (1881).

T. saturatè rufescenti-brunneus, vix castaneus: plagâ albâ gutturali nullâ: remigibus intùs lætè aurantiacis, axillaribus et subalaribus ferè concoloribus: corpore subtùs sordidè rufescenti-brunneo, gutture concolore et obsoletè nigro striolato: abdomine imo et subcaudalibus albis, his lateraliter obscurè brunneo angustè marginatis.

As Messrs. Salvin and Godman have pointed out in the 'Biologia Centrali-Americana,' this species has a very limited range, being "nowhere common, and confined to the narrow tract of country between Costa Rica and the Isthmus of Panama."

It was described by Lawrence from a Panama specimen, and it has been sent by M'Leannan from Lion Hill Station in that State (Lawr. Ann. Lyc. N. Y. vii. p. 470). Arcé has likewise procured it at Santa Fé in Veragua (Salvin, P. Z. S. 1867, p. 133).

In Costa Rica Carmiol met with it at Cervantes (Lawr. Ann. Lyc. N. Y. ix. p. 91), and a specimen from Valza, also procured by Carmiol, is in the Salvin-Godman Collection. Von Frantzius records it from Orosi in February, and the Volcan de Poas in March (J. f. O. 1869, p. 290); and specimens from Costa Rica are in most collections at the present time.

The species is closely allied to *T. hauxwelli*, but differs principally in its larger bill, and it is also whiter on the abdomen and has the under tail-coverts less broadly edged with brown.

The dark tone of colour and the dusky under surface of the wing separate it at once from *T. fumigatus*, of which Seebohm considered it to be the Central-American form (Cat. Birds, v. p. 218).

Adult female. General colour above dark chestnut-brown, the wing-coverts like the back; quills sepia-brown, externally of the same colour as the back; tail also like the back; crown of head and sides of face uniform with the back, the ear-coverts showing obsolete pale shaft-lines; cheeks and under surface of body a little paler than the upper surface, and inclining somewhat to dark cinnamon-brown, the throat scarcely paler than the breast, and the blackish streaks obsolete; the lower abdomen whitish, and the under tail-coverts white, the basal ones with concealed lateral margins of brown; the flanks and thighs rather darker rufous-brown than the breast and abdomen; under wing-coverts and axillaries deep cinnamon or orange, the quills dusky below, with a pale orange quill-lining: bill and feet blackish (in skin). Total length 9 inches, wing 4·9, tail 3·6, tarsus 1·15.

A Costa-Rican specimen from Valza is darker brown and not so chestnut as the Veraguan bird described, and is decidedly not so rufous underneath. The white extends much further up the abdomen, and the under tail-coverts are purer white, with distinct edgings of dusky brown. The extent of white on the abdomen varies somewhat in the series examined.

The culmen in adult birds measures 1 inch in length.

The young is more dusky than the adults and much browner in tint; the head is streaked with cinnamon, and the wing-coverts and inner secondaries have distinct triangular spots of pale cinnamon at the tips; the throat and fore-neck have buff centres, and the breast and sides of the body are mottled with sub-terminal bars of dark brown on the feathers.

I have described a Veraguan specimen in the Salvin-Godman Collection, and the bird figured is in the Seebohm Collection from Costa Rica. [R. B. S.]

TURDUS HAUXWELLI, *Lawr.*

HAUXWELL'S THRUSH.

Turdus hauxwelli, Lawr. Ann. Lyc. N. Y. ix. p. 265 (1870); Seebohm, Cat. Birds Brit. Mus. v. p. 217 (1881).
Turdus fumigatus (nec Licht.), Scl. & Salv. P. Z. S. 1866, p. 177, 1873, p. 255.
Turdus fumigatus hauxwelli, Allen, Bull. Amer. Mus. ii. p. 78 (1889).

T. suprà rufescenti-brunneus: plagâ albâ gutturali nullâ: remigibus intùs pallidè rufescentibus, minimè aurantiacis: pectore medio et abdomine rufescenti-brunneis, gutture concoloribus, hoc vix nigricanti-brunneo striato: axillaribus et subalaribus lætè aurantiacis.

The present species is known only from Upper Amazonia and Bolivia. It was first sent by the veteran collector, John Hauxwell, from Pebas (Lawrence, *l. c.*), who subsequently met with the species at Samiria in October, a specimen from this locality being in the Salvin-Godman Collection. Mr. Edward Bartlett obtained it at Nauta, Chamicuros, and Santa Cruz (Scl. & Salv. P. Z. S. 1866, p. 177, 1873, p. 255). The late Henry Whitely also procured it at Yquitos in October (Seebohm, Cat. Birds, v. p. 217). Dr. Rusby, on his journey through Bolivia down the Rio Madeira, met with it at Reyes in June (Allen, Bull. Amer. Mus. ii. p. 78, 1889).

Mr. Bartlett says that he found the species less common than *T. phæopygus*, resorting to low boggy places near water. Dr. Rusby states that in Bolivia he observed it "frequenting open ground, preferring low bushes in or bordering prairies rather than the forest."

This species is evidently closely allied to *T. plebeius* and *T. obsoletus*, but is everywhere more chestnut than the former species. The head and upper surface of the body are decidedly chestnut, not olive-brown, and the same shade pervades the wings and tail. The under surface of the body is rufous-brown, the throat is scarcely paler, with a few indistinct blackish streaks; there is a little white on the lower abdomen, and the under tail-coverts are brown washed with rufous and having dusky mesial shaft-lines. The under wing-coverts and axillaries are rich deep orange, brownish towards their bases; the quills are dusky below, rufescent along the inner webs.

From *T. obsoletus* it is very difficult to separate *T. hauxwelli*, and the only characters that I can find are the larger bill, whiter abdomen and under tail-coverts, the latter being less broadly edged with brown.

A male from Samiria in the Salvin-Godman Collection measures as follows:—Total length 9 inches, culmen 0·85, wing 4·45, tail 3·35, tarsus 1·15.

A female from Santa Cruz is 8·6 inches in length, and has the wing 4·45 inches, the culmen being 0·9 inch.

The specimen figured is a skin from Pebas in the Seebohm Collection. [R. B. S.]

TURDUS NIGRIROSTRIS, *Lawr.*

ST.-VINCENT THRUSH.

Turdus nigrirostris, Lawr. Ann. New York Acad. Sci. i. p. 147 (1878); id. Proc. U.S. Nat. Mus. i. pp. 187, 267 (1878); Seebohm, Cat. Birds Brit. Mus. v. p. 218 (1881).
Merula nigrirostris, Cory, List B. West Indies, p. 5 (1885); id. Cat. West Ind. B. p. 122 (1892).

T. remigibus intùs lætè aurantiacis, subalaribus et axillaribus concoloribus: pileo dorso concolore: abdomine imo albicante: subcaudalibus albidis, brunneo lætè marginatis: mento albicante, gutture paullulùm brunneo striato: notæo saturatè brunneo: gastræo dilutiùs brunneo, rhachidibus saturatioribus obsoletè indicatis.

The present species inhabits the Lesser Antilles, where it appears to be confined to the islands of St. Vincent and Grenada. In both of these islands it was found by Mr. F. Ober, and a series of specimens is in the Salvin-Godman Collection from Grenada and St. Vincent, where they were procured by Mrs. Herbert Smith.

Dr. J. Grant Wells writes as follows from Grenada (Proc. U.S. Nat. Mus. ix. p. 609, 1887):—"This bird is exclusively confined to the deep woods, preferring the dark valleys along the mountain streams, and may always be found on the 'figueur' trees, on the berries of which it feeds. It is rather a shy bird, and immediately makes off with a 'cluck, cluck' on the approach of anyone. Its note may be heard morning and evening, and has been compared to the words—'John Pierre oh—John Pierre oh—mi yes, mi yes, mi yes,' with a stress on 'Pierre,' the last three words rather fast.

"The nest is generally placed in the fork of a tree with dark foliage, and composed outwardly of dried roots and ferns, the shell of mud, and lined with finer roots. The eggs are three in number, of a pale green, speckled and blotched with reddish brown, the spots confluent at the large end. They measure 1·68 inch by 0·84 inch, and 1·20 inch by 0·82 inch."

Mr. Ober gives the following note on the species in Grenada:—"In the deep woods one may be startled by a low note of alarm from this bird, like the single cluck of the Mocking-bird of the Southern States. Searching carefully, you may discover the author of it sitting upon a low tree, with head protruded, eagerly examining the surroundings for the cause of the noise made by your coming. Discovering you, it hastily makes off with a parting cluck. Its song is often heard in the high woods, strange notes 'fee-ow, fee-oo,' etc. often repeated. Another cry it has when alighting and unexpectedly discovering your presence, similar to the cry of our Robin as heard at evening time in spring—a harsh cry mingled with softer notes. I have only found it in the high forests" (Proc. U.S. Nat. Mus. i. p. 267). In St. Vincent, Mr. Ober says it was not numerous, but was found on lower ground than *Margarops montanus* (*t. c.* p. 187).

Adult male. General colour above ruddy brown, the head scarcely to be distinguished, but a trifle darker; wing-coverts and inner secondaries like the back; bastard-wing, primary-coverts, and quills sepia-brown, externally rufous-brown; tail-feathers dark chocolate-brown, with a slight rufous tinge; lores and sides of face uniform dusky brown, including the cheeks; under surface of body nearly uniform brown, much lighter than the back; the chin whitish, with dusky brown streaks,

which extend on to the throat; on the chest some indications of dusky shaft-lines; thighs pale brown; lower abdomen and under tail-coverts whitish, with broad edges of pale brown, the longer tail-coverts brown, excepting at the tip, which is white; under wing-coverts and axillaries orange-buff; quills dusky brown below, ashy-fulvous along the inner web. Total length 9 inches, culmen 0·95, wing 4·7, tail 3·5, tarsus 1·3.

Adult female. Similar to the male. Total length 9 inches, culmen 0·9, wing 4·5, tail 3·2, tarsus 1·35.

The descriptions have been taken from a pair of specimens from Grenada in the Salvin-Godman Collection. Mr. Seebohm did not figure the species, probably because there were no examples of the species in English museums at the time he was engaged on this work. [R. B. S.]

TURDUS FUMIGATUS, *Licht.*

RUSSET-BELLIED THRUSH.

Turdus fumigatus, Licht. Verz. Doubl. p. 38 (1823); Seebohm, Cat. Birds Brit. Mus. v. p. 216 (1881).
Turdus ferrugineus, Neuwied, Beitr. Naturg. Bras. iii. p. 649 (1831); Allen, Bull. Amer. Mus. ii. p. 212 (1889).
Turdus casius (nec Bp.), Léot. Ois. Trinid. p. 204 (1866).
Merula fumigata, Allen, Bull. Amer. Mus. iv. p. 51 (1892); Chapm. op. cit. vi. p. 22 (1894).

T. remigibus intùs lætè aurantiacis, subalaribus et axillaribus concoloribus: pileo notæoque concoloribus, rufescentibus, gastræo vix pallidiore: gutture distinctè brunneo striato.

The Russet-bellied Thrush is found in Brazil and Lower Amazonia to Guiana and Venezuela, as well as in the island of Trinidad.

Natterer met with it in the higher woods at the station of Capt. Gama in July, on the banks of the Rio Guaporé in September, at S. Vicente in December, and at Borba in April, June, and August (Pelz. Orn. Bras. p. 94). Specimens from Bahia, obtained by Dr. Luschnath, are in the Salvin-Godman Collection, and Prince Max of Neuwied noticed it especially on the Rio Espirito Santo (Beitr. Orn. Bras. iii. p. 649). Mr. E. L. Layard records the species from Pará (Ibis, 1878, p. 376), and an example from the island of Mexiana is in the collection made by Dr. A. R. Wallace on the Amazons (Scl. & Salv. P. Z. S. 1867, p. 568).

Mrs. Herbert Smith obtained a specimen at El Pilar, in Venezuela, in November (Allen, Bull. Amer. Mus. Nat. Hist. iv. p. 51), and Mr. Goering met with the species at San Esteban in March and at El Pilar (Scl. & Salv. P. Z. S. 1868, p, 166). Specimens said to be from the Rio Orinoco are in the Seebohm Collection.

Prince Max says that the nest of this species was very like that of the European Blackbird. The eggs, taken in December, were three in number, of a beautiful green with spots of liver-brown.

Mr. W. A. Forbes noticed caged specimens in nearly every place he visited from Parahyba to Garanhuns, but he only saw it in its wild state at Cabo and Recife. He states that it is kept by the natives as a cage-bird, and is also relentlessly shot down for food, and is therefore now scarce in the neighbourhood of towns (Ibis, 1881, p. 327).

Mr. Layard says that in the vicinity of Pará the species is known as the "Sabia," and it is often kept in cages as a singing-bird by the people. It feeds on berries. On the 26th of January, 1873, he observes:—"I daily hear a bird singing in the early morning, with a note just like that of the European Thrush. I am told that this is the 'Sabia,' and though I have not myself seen it singing, I have no doubt that this is really the songster which produces the only music I have heard in the forest."

In British Guiana it has been obtained by Whitely at Bartica Grove in December, and Camacusa from February to May, as recorded by Mr. Salvin (Ibis, 1885, p. 198). Mr. E. C. Taylor (Ibis, 1864,

p. 80) says that he found it to be the commonest species of Thrush in Trinidad, especially frequenting the cocoa-plantations.

"This Thrush," says Léotaud, "is resident and common in Trinidad, and, like *T. gymnophthalmus*, is met with principally in the middle of the cocoa-plantations; from this is derived its common name of 'Grive des Cacaos.' It is solitary in its habits, or is found only with the female, and its food consists principally of berries, but it also eats insects, especially ants and their larvæ and eggs. Its ways are like those of *T. gymnophthalmus*, and its flesh is very good."

Adult. General colour above light tawny-brown or cinnamon; wing-coverts like the back, the bastard-wing, primary-coverts, and quills light sepia-brown, externally of the same colour as the back; tail-feathers reddish-brown, washed with tawny-brown on the margins; crown of head and sides of face a little duller than the back, and the ear-coverts with paler shaft-lines; under surface of body light cinnamon-rufous, the throat somewhat whiter, with a few faintly indicated rows of brown triangular spots; thighs dusky brown; lower abdomen whitish; under tail-coverts white, with light rufous margins to the feathers; under wing-coverts and axillaries bright orange-rufous; quills dusky below, with the quill-lining orange-rufous, nearly of the same tint as the under wing-coverts: "bill, feet, and iris brown" (*Léotaud*). Total length 8·5 inches, culmen 0·95, wing 4·6, tail 3·3, tarsus 1·25.

This species seems to have a dark bill at all seasons of the year, and apparently varies but little in plumage. The want of a series of sexed and dated specimens prevents me from describing all the seasonal changes, but the five examples from British Guiana obtained between December and May tend to show that the head is rather browner than the back in the summer plumage and the colour of the back is darker brown. In what I take to be the winter plumage the general colour is lighter rufous, and the head is like the back. Young birds after the first moult are similarly coloured. The underparts are also darker in the breeding-plumage and the chest is smudged with dusky brown, of which little or no trace is to be seen in the winter plumage.

The sexes do not seem to differ in plumage, and measure as follows:—

	Total length.	Culmen.	Wing.	Tail.	Tarsus.
♂ ad. Camacusa.....	8·7	1·0	4·55	3·5	1·25
♀ ad. Camacusa.....	8·4	0·9	4·35	3·35	1·2

The specimen described is a skin from Venezuela in the Seebohm Collection. The figure in the Plate is drawn from a Camacusa specimen in the same Collection. [R. B. S.]

TURDUS ALBIVENTER, *Spix*

SPIX'S THRUSH.

Turdus albiventer, Spix, Av. Bras. i. p. 70, pl. lxix. fig. 1 (1824); Scl. & Salv. Exot. Orn. p. 147, pl. lxxiv. (1869); Seebohm, Cat. Birds Brit. Mus. v. p. 216 (1881).
Turdus humilis, Licht. Nomencl. Av. Mus. Berol. p. 26 (1854).
Turdus ephippialis, Sclater, P. Z. S. 1862, p. 109.
Turdus albiventris ephippialis, Berlepsch, J. f. O. 1884, p. 278.

T. plagâ gulari albâ nullâ: remigibus intùs lætè aurantiaco-rufis, subalaribus et axillaribus concoloribus: pileo pallidè griseo haud dorso concolore: gutture albido, brunneo distinctè striato: corporis lateribus ochrascenti-brunneis aut cinerascentibus ochraceo lavatis.

This species is easily distinguished from its allies by the grey head, which contrasts with the colour of the back. At the same time it has very bright orange-rufous under wing-coverts and axillaries, the quill-lining being of the same bright colour.

The range of this Thrush in South America is a wide one, as it extends from Southern Brazil to Amazonia, Guiana, and Colombia. Specimens from Bahia are frequent in museums, and the late Mr. W. A. Forbes met with the species in Pernambuco. His specimens are in the British Museum, but the bird is not mentioned in his paper in the 'Ibis' for 1881 (p. 327). To the southward it has been recorded from Minas Geraes by Spix (*l. s. c.*), and a specimen obtained by Mr. Joyner at Pelotas in Rio Grande do Sul is in the Salvin-Godman Collection.

Natterer met with this Thrush at Ytararè in August, Ypanema in May, and Cuyaba in July. He also obtained specimens in Matto Grosso in October (Pelz. Orn. Bras. p. 93), and in that province it was found breeding by Mrs. Herbert Smith (Allen, Bull. Amer. Mus. Nat. Hist. iii. p. 341). Natterer likewise procured specimens near Pará in November, and at Forte do Rio Branco in February, as well as on the Rio Muria (Pelz. *t. c.*). It was obtained by Dr. A. R. Wallace on the island of Mexiana in December (Scl. & Salv. P. Z. S. 1867, p. 568).

Dr. Goeldi met with the species at Amapá (2° N. lat.) in Southern Guiana (Ibis, 1897, p. 161), and a Demerara skin is in the Seebohm Collection. In British Guiana it has been obtained by Whitely on Roraima, between August and January, at a height of from 3000 to 4000 feet; and it must breed here, as a young bird was obtained on the 29th of August (Salvin, Ibis, 1885, p. 198). The same collector met with it at Quonga in October and November, and specimens are in the Salvin-Godman Collection. Dr. J. J. Quelch and Mr. F. V. McConnell also found it in the Savana of British Guiana, and specimens have been presented to the British Museum by these gentlemen. Its occurrence in Colombia is evidenced by some specimens in the Salvin-Godman and Sclater Collections from Bogotá, among the latter being the type of *Turdus ephippialis*, which is certainly only *T. albiventer*. Mr. Claude Wyatt, in his notes on the birds of the Magdalena Valley (Ibis, 1871, p. 320), writes:—"We shot this Thrush by the sides of little streams, where there were a few trees and bushes, between Ocaña and La Cruz, and again met with it in the Cocuta Valley. Altitude 5000–4000 feet." Count von Berlepsch has also recorded specimens from Bucaramanga received from Herr Minlos (J. f. O. 1884, p. 278).

Prince Maximilian writes concerning the species in Brazil:—"This Thrush is not uncommon in the region through which I travelled, and I frequently observed it in Espirito Santo. It inhabits not only the large woods, but is also found in thinly scattered bushes. I have never heard it give forth any particular song. Its nest is built in thick bush, placed either on a large bough or on the fork of a branch. It exactly resembles that of our European Blackbird, and is fairly large, being built of small green plant-stems, interwoven with dry roots and lined with delicate fibres and rootlets. In December I found a nest containing three eggs; they were of a beautiful green, speckled with liver-brown, somewhat elongated in shape and very blunt at the end."

Professor J. A. Allen describes the eggs sent by Mrs. Herbert Smith from Chapada as follows:—"Sets of eggs, taken at different dates in October, show them to be very variable in size and form as well as in colour. They are generally elongated, measuring about 1·15×·90 inch. The ground-colour varies from pale clear bluish white to a pale yellowish bluish white; the markings are generally fine, in the shape of oblong reddish-brown dots, covering from about one-third to nearly the whole of the surface. The markings vary in colour from russet-brown to hazel."

Adult. General colour above olive-brown, becoming more ashy on the lower back, rump, and upper tail-coverts; the wing-coverts slightly more russet-brown, the bastard-wing, primary-coverts, and quills being light sepia-brown, externally russet-brown like the wing-coverts; tail-feathers sepia-brown, with a tinge of ashy; crown of head, nape, and hind-neck ashy-grey, contrasting with the back; lores whitish; sides of face ashy-grey, with obsolete whitish shaft-lines; cheeks also ashy-grey, the malar line white; throat white, streaked with rows of triangular spots of dusky brown; fore-neck and breast light ashy, as well as the upper abdomen; the lower abdomen and under tail-coverts white, with dusky brown bases, the longer tail-coverts dusky brown, edged with white; thighs light ashy; sides of body ashy, slightly washed with brown; axillaries and under wing-coverts bright orange; quills dusky below, light along the inner webs. Total length 9 inches, culmen 0·85, wing 4·65, tail 3·55, tarsus 1·2.

The specimen described is one from Bahia in the Seebohm Collection. Examples from Forte do Rio Branco, procured by Natterer in February, are much more olive-grey on the back and breast than one killed at the same place in November. The latter example is much more russet-brown above and below, and this shade predominates still more in a specimen obtained by Natterer at Ypanema in May. Here the general tone of the upper surface is pale cinnamon-brown, shaded with ashy, and the breast and flanks incline to light brown, a little more rufous on the flanks. This last bird is probably in winter plumage, and the grey of the head is very little differentiated, being almost of the same colour as the back. For the loan of these specimens I am indebted to Dr. Lorenz von Liburnau, who kindly lent them from the Vienna Museum for examination.

Of the series sent from Chapada by Mrs. Herbert Smith, Prof. J. A. Allen writes as follows:—"This species is represented by a series of 19 specimens, including about an equal number of males and females, one young bird in first plumage, and also a nest and two sets of eggs. These latter were taken Oct. 12 and Oct. 19, and the full-grown fledgling on Nov. 28. Specimens were collected in nearly every month of the year, showing the species to be resident.

"There is considerable seasonal variation in colour, that of breeding birds (taken Oct.–Nov.), as compared with specimens collected in March and April, often representing a strong shade of cinnamon on the breast and abdomen, of which there is only a very slight trace in what may be termed winter specimens. The forehead is often decidedly brownish or washed with rusty, irrespective of season, though generally most strongly so in the female, which has the whole head usually browner and more nearly concolor with the back than in the male. The female also averages slightly smaller than the male, in which the wing ranges from 4·45 in. to 4·76, against 4·28 to 4 54 in the female.

"The young bird in first plumage differs from the adults in being everywhere washed with pale cinnamon below, marked with faint blackish cross-bars; the general colour above is much less olivaceous, with narrow whitish shaft-lines, and all the coverts are conspicuously tipped with pale rust" (Bull. Amer. Mus. iii. p. 341).

I find but very little difference in plumage in this species in the summer and winter seasons, and the cinnamon tinge on the breast alluded to by Dr. Allen seems to be generally characteristic of female birds in winter plumage, when the outer aspect of the wings is also somewhat more rufous, and this is especially the case in freshly moulted young birds. I have an idea that much of the rufous colour which besets the head and other parts of the body in some individuals of this species is due to a stain from the berries on which they feed.

The specimen described and figured is a Bahia skin in the Seebohm Collection. [R. B. S.]

TURDUS GRAYI, *Bp.*

GRAY'S THRUSH.

Turdus helvolus, Licht. Preis-Verz. Mex. Vög. no. 85 (1830); id. Nomencl. Av. Mus. Berol. p. 26 (1854).
Turdus grayi, Bp. P. Z. S. 1837, p. 118; Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 18 (1879); Seebohm, Cat. Birds Brit. Mus. v. p. 219 (1881).
Planesticus grayi, Bp. C. R. xxxviii. p. 4 (1854).
Planesticus luridus, Bp. C. R. xxxviii. p. 4 (1854).
Planesticus casius, Bp. C. R. xli. p. 657 (1855).
Turdus tristis (nec Swains.), Sclater, P. Z. S. 1856, p. 294.
Turdus casius, Sclater, P. Z. S. 1859, p. 330; Seebohm, Cat. Birds Brit. Mus. v. p. 220 (1881).
Turdus cæsius, Gray, Hand-l. B. i. p. 257, no. 3744 (1869).
Turdus luridus, Scl. & Salv. Nomencl. Av. Neotr. p. 2 (1873).
Merula grayi, Ridgway, Proc. U.S. Nat. Mus. v. p. 494 (1883).
Merula tamaulipensis, Nelson, Auk, xiv. p. 75 (1897).

T. plagâ albâ gulari nullâ: pedibus brunneis, minimè flavis: subcaudalibus cervinis, abdomine concoloribus.

Gray's Thrush is a common species throughout Central America from Mexico to Panama, ranging also into Colombia. The typical examples came from Guatemala, where they were obtained by Colonel Velasquez (Bp. P. Z. S. 1837, p. 118). Specimens had previously been procured in the vicinity of Jalapa by the German travellers Deppe and Schiede, and these were named by Lichtenstein *Turdus helvolus* (*l. c.*); but as he never gave any diagnosis of the Mexican form, his name cannot be employed for the species. Subsequently Bonaparte described (*l. c.*) his *Planesticus casius* from Panama on account of its greyer tint, and yet a third form was characterized by him as *P. luridus* from Colombia (*l. c.*).

Seebohm united the last-named species with the true *T. grayi*, which ranged, according to his conclusions, from Mexico, through Central America to Colombia (Cat. Birds Brit. Mus. v. p. 219); but he recognized *T. casius* as a distinct form, differing in "having the upper parts russet-brown instead of olive-brown," and he regarded it as "a local race, which has become partially differentiated from its near ally in Panama" (*t. c.* p. 220). The material at his disposal in 1881 was so small compared with that which we now possess in the British Museum, that there is no doubt that if he had examined the specimens at present in the Salvin-Godman Collection, he would have entirely changed his opinion. He appears, however, not to have sufficiently weighed the wise opinion given by Messrs. Salvin and Godman in the 'Biologia,' where the impossibility of recognizing *T. casius* and *T. luridus* was clearly pointed out.

I should be far from insisting that there is no variation in the colour of *Turdus grayi* in the various parts of its range, and I think that, in a few isolated localities, the birds of the forest districts, where they may be permanent residents, are darker in tone than those of the low country; but the characters given by Seebohm for the separation of the two races into *T. grayi* and *T. casius* are due

merely to differences in seasonal plumage. I have pointed out in the description of the species given below, that the winter plumage is much more russet than the breeding-plumage, which is greyer and more olive. As Messrs. Salvin and Godman have shown in the 'Biologia,' the greyer birds are found with others of the normal colour; but when reliable dates of capture are attached to the specimens, it will be found that the greyer individuals are in spring or summer plumage, while the more rufous ones have been killed in the winter months. The reluctance of collectors to preserve the ragged and moulting specimens of the autumn months has resulted in the regrettable fact that in all the large series in the Museum we have not a single bird which shows the moult from the worn grey summer plumage to the russet dress of winter.

Gray's Thrush will probably be found to be a species which visits the more elevated regions for nesting-purposes, spreading over the lower districts in the winter. The late Colonel Grayson says that it was gregarious and partially migratory in the district of Tepic which he visited (Proc. Bost. Soc. N. H. xiv. p. 276). Messrs. Salvin and Godman found it breeding in abundance in Guatemala up to an elevation of between 4500 and 6000 feet (Biol. Centr.-Amer., Aves, i. p. 19). In Chiapas Mr. W. B. Richardson has procured specimens from March to June at an elevation of 4000 feet, and Mrs. Herbert Smith at Omilteme in Guerrero at 8000 feet.

The distribution of the species in Mexico is well illustrated by the series of specimens in the Salvin-Godman Collection, as will be seen from the localities enumerated below.

The Mexican localities for the species in the British Museum are as follows:—San Ignacio, Nuevo Leon, May 29, 1888 (*F. B. Armstrong*: *Salvin-Godman Coll.*); Tampico, Feb. 1888 (*W. B. Richardson*: *S.-G. Coll.*); Aldama, Tamaulipas, March 1888 (*W. B. R.*: *S.-G. Coll.*); Sierra Madre above Ciudad Vittoria, Tamaulipas, April 1888 (*W. B. R.*: *S.-G. Coll.*); Valles, San Luis Potosi, May 1888 (*W. B. R.*: *S.-G. Coll.*); City of Mexico (*G. H. White*: *Seebohm Coll.*); Playa Vicente, Vera Cruz, Dec. 1888 (*M. Trujillo*: *S.-G. Coll.*); Huatusco, Vera Cruz, July 1888 (*F. Ferrari-Perez*: *S.-G. Coll.*); Plan del Rio, Jalapa, July 1888 (*F. Ferrari-Perez*: *S.-G. Coll.*); Jalapa, Jan., March 1888 (*F. D. Godman*: *S.-G. Coll.*); Orizaba, Dec. 1887 (*F. D. Godman*: *S.-G. Coll.*); Misantla, March 1888 (*F. D. Godman*: *S.-G. Coll.*); Coatepec, Vera Cruz, Oct. 1889 (*M. Trujillo*: *S.-G. Coll.*); Atoyac, Vera Cruz, April (*Mrs. Herbert Smith*: *S.-G. Coll.*); Villa Alta, Oaxaca, March 1889 (*M. Trujillo*: *S.-G. Coll.*); Tehuantepec, July 1877 (*F. Sumichrast*: *Seebohm Coll.*); Chimalapa, Tehuantepec, 4000 feet, March 31, 1890 (*W. B. Richardson*: *S.-G. Coll.*); Sierra San Domingo, Tehuantepec, April 15, 1890 (*W. B. Richardson*: *S.-G. Coll.*); Omilteme, Guerrero (8000 feet), Aug. 1888 (*Mrs. Herbert Smith*: *S.-G. Coll.*); Teapa, Jan., Feb. 1888 (*Mrs. Herbert Smith*: *S.-G. Coll.*); Tuxtla, Chiapas, March 3–17 (*W. B. Richardson*: *S.-G. Coll.*); Union Juarez, Chiapas (4000 feet), March 24 (*W. B. Richardson*: *S.-G. Coll.*); Huehuetan, Chiapas, April 1897 (*W. B. R.*: *S.-G. Coll.*); Jitotol, 4000 feet, May 6, 1897 (*W. B. R.*: *S.-G. Coll.*); Santa Rita, Chiapas, May 8, 1897 (*W. B. R.*: *S.-G. Coll.*); Comitan, Chiapas, May 18, 1897 (*W. B. R.*: *S.-G. Coll.*); Tonala, Chiapas, June 2, 1896 (*W. B. R.*: *S.-G. Coll.*).

Besides the above-named Mexican localities for the species there are other records, as set forth in the 'Biologia Centrali-Americana' by Messrs. Salvin and Godman. Specimens were sent by Sallé from Cordova (Scl. P. Z. S. 1856, p. 294, s. n. *T. tristis*), and from Choapam and Villa Alta by Boucard (Scl. P. Z. S. 1859, p. 370). Baird has recorded specimens from Mirador procured by Sartorius (Review Am. B. p. 26), and Sumichrast says that it was the most abundant of all the Mexican Thrushes in the State of Vera Cruz, where it is a resident species in the hot and temperate regions, but does not pass above an elevation of 4300 feet (Mem. Bost. Soc. N. H. i. p. 543). On the Isthmus of Tehuantepec, he says, "I have only observed this bird at Santa Efigenia, where it is not very abundant, and where its presence is probably explained by the neighbourhood

of the Sierra de Chimalapa" (Lawrence, Bull. U.S. Nat. Mus. iv. p. 11). Grayson found the species breeding at Janja, in the Territory of Tepic, in April and May, and he also says that it is resident in the Tres Marias Islands (Proc. Bost. Soc. xiv. p. 276).

I can see no difference of plumage in the series of Mexican specimens which cannot be accounted for by age or season, though two of the Teapa examples are rather more ruddy than the majority of those killed in the winter months. Mr. Nelson's *Turdus tamaulipensis* is evidently nothing but an example of *T. grayi* in spring plumage, and that there is no reason to suppose that a separate race exists in Tamaulipas is evident from the continuous series of localities from Nuevo Leon southwards represented in the Salvin-Godman Collection.

In Yucatan Gray's Thrush has been met with near Merida by Schott (Lawrence, Ann. Lyc. N. Y. ix. p. 314), and specimens obtained by Mr. Godman at Tabi in February are in the Salvin-Godman Collection. In the same Collection are several skins procured by Dr. G. F. Gaumer at Buctzotz, Temax, Peto, and Izamal in April. The same naturalist also found it on the islands of Cozumel, Meco, and Mugeres from November to January (Salvin, Ibis, 1888, p. 243). Mr. Blancaneaux met with the species in the vicinity of Belize in British Honduras, and at Cayo in the Western district of that country (*spec. in mus. S.-G.*).

In Guatemala Messrs. Salvin and Godman (Biol. Centr.-Amer., Aves, i. p. 19) state that the species is common in the neighbourhood of towns and villages up to an elevation of between 5000 and 6000 feet. It was found breeding in abundance in April and May near Dueñas, and also near San Gerónimo in Vera Paz. Specimens were obtained by them at Dueñas, Escuintla, Retalhuleu, San Gerónimo, Tactic, and Coban; and Mr. W. B. Richardson has met with it on the Sierra de las Minas (Tierra Caliente) and at Retalhuleu in July, at Toleman (5000 feet) and Panajachel in December.

Mr. G. M. Whitely procured specimens in Honduras near San Pedro (Scl. & Salv. P. Z. S. 1870, p. 836), and Captain J. M. Dow at Acajutla in Salvador (Baird, Review Amer. B. p. 26). In the latter State Mr. W. B. Richardson also met with it at La Libertad in February, and on the Volcan San Miguel in April.

In Nicaragua Mr. Richmond found this species at Greytown and on the Escondido River (Proc. U.S. Nat. Mus. xvi. p. 482). Mr. C. C. Nutting states that it was common at the Hacienda Sucuyá on the west side of Lake Nicaragua, and equally abundant at the Hacienda Los Sábalos on the Rio San Juan del Norte (Proc. U.S. Nat. Mus. vi. p. 380). Specimens collected by Mr. Richardson, in the Salvin-Godman Collection, are from the following localities in Nicaragua:—Chontales, Jan.; Mombacho, Granada, Feb. 8; El Volcan, Chinandega, April 19–28; Matagalpa, Aug., Sept.

In Costa Rica Gray's Thrush has been sent from San José and Barranca by Carmiol (Baird, Review, p. 26), Quebrada Hondo and Lepanto by Von Frantzius (J. f. O. 1869, p. 290), and the Volcan de Cartago by Carmiol. Mr. Nutting obtained it on the Volcano of Irazu, but it was apparently not so common as lower down at San José, where it was abundant in March (Ridgw. Proc. U.S. Nat. Mus. v. pp. 494, 499). He also found it plentifully at the Hacienda La Palma, in the Bay of Nicoya. Von Frantzius says that it is one of the commonest birds in Costa Rica, and that he met with it from the shores of the Gulf of Nicoya to places as much as 6000 feet above the sea. He remarks that it is more rarely seen during the dry season than during the wet, at the commencement of which it breeds.

M'Leannan procured several specimens of this species at Lion Hill Station, in the State of Panama, some of which were recorded as *T. casius* by Lawrence (Ann. Lyc. N. Y. vii. p. 326); others are in the Salvin-Godman Collection, which also possesses examples from Santa Fé, Chitra, and the Volcan de Chiriqui in Veragua, where they were obtained by Enrique Arcé (Salvin, P. Z. S. 1867,

p. 132, 1870, p. 180). The species was likewise met with at David by Hicks (Salvin, Ibis, 1872, p. 314), and Mr. Salvin observed it at Obispo (Biol. *t. c.* p. 18).

Specimens from Colombia seem to me to be absolutely identical with those from Central America, to judge from the specimens in the British Museum. Three of these were purchased from dealers, but the Salvin-Godman Collection contains one example from Santa Marta obtained by Mr. F. A. Simons in February 1879 (Salvin and Godman, Ibis, 1880, p. 115).

Grayson writes:—"I procured specimens near Tepic at the beautiful haçienda of Janja, belonging to Barron and Forbes, in the months of April and May; they were in full song then, and commencing to build their nests among the orange- and mango-groves that so handsomely ornament the grounds of Janja. One was here kept in a cage and its melodious whistling notes could be heard for some distance. Their song somewhat resembles that of the northern Robin (*Turdus migratorius*), but is more voluminous."

Mr. Nutting says that, in Costa Rica, "the habits and note were similar to those of *Merula migratoria*. It was rather solitary and silent during the time I collected in the region (April), but this is probably due to the fact that it was the breeding-season." Von Frantzius did not think much of the singing-powers of Gray's Thrush, but his testimony does not agree with that of Messrs. Salvin and Godman. They write:—"It is usually to be seen in Guatemala in the outskirts of plantations and in the orchards near houses, but not so much in the forest away from habitations. Its song is rich and of considerable compass, being quite equal to that of any of its congeners. Its powers of song make it a favourite cage-bird in Spanish and native houses." Mr. F. M. Chapman also praises its song:—"The calls of *Merula grayi* bear a strong resemblance to certain of those of our Robin (*Merula migratoria*), but it has also a wholly distinctive nasal mewing note. Its song I consider to be one of the finest I have ever heard a bird sing. In its varied character, fluency, and execution it suggests the song of the Cat-bird (*Galeoscoptes carolinensis*), Thrasher (*Harporhynchus rufus*), and Mocker (*Mimus polyglottus*), but it is sweeter in tone and less consciously sung; in spirituality I was reminded of both the Wood-Thrush (*Turdus mustelinus*) and Hermit-Thrush (*T. pallasi*). In short, it is a flawless performance, and, heard at nightfall, when the birds sing most freely, it is one of the most satisfying bird's songs to which it has been my fortune to listen."

In Nicaragua Mr. Richmond found the species common, and he considers the song to be not unlike that of *Merula migratoria*, although somewhat inferior. On the Escondido the banana-plantations are its favourite haunts, and it frequently places its nest in the bunches of fruit, occasionally building in the space at the junction of a leaf with the stem of the plant. "A nest secured on July 1st resembled that of *M. migratoria* in having the walls well plastered with mud. It contained two fresh eggs, measuring 1·09 by 0·78, and 1·14 by 0·79 inch; pale bluish-grey, spotted and blotched with reddish-brown. Two young birds just able to fly were found on the 18th of June. It is interesting to note that in the tropics many species lay but two eggs. The domestic fowls are not so prolific as in the north apparently, and their eggs are small-sized."

Mr. Salvin says (Ibis, 1859, p. 5):—"It breeds commonly at Dueñas in the months of April and May, making a nest of roots, fibres, and small twigs, with a lining of dry grass and fine roots. The eggs, three in number, are more or less covered with spots and blotches of red-brown on a ground of pale bluish green, the spots being more concentrated at the obtuse end. They measure 1 inch $2\frac{1}{2}$ lines in axis and $10\frac{1}{2}$ lines in diameter."

Adult male. General colour above russet-brown, with a strong tinge of olive, the wing-coverts like the back; bastard-wing, primary-coverts, and quills dusky brown, externally like the back; tail-feathers ashy-brown, washed on the outer webs with the same colour as the back; crown of head ruddy-brown, slightly less olive and more rufescent than the back; lores, feathers below the eye, and

ear-coverts dull reddish-brown, the latter with obsolete pale shaft-lines; under surface of body sandy fawn-colour, browner on the fore-neck and chest, the throat and cheeks lighter and verging to whitish on the chin; the cheeks and throat distinctly streaked with rows of dusky brown spots; abdomen and under tail-coverts and thighs pale sandy-buff, the longer coverts with dark brown bases; axillaries and under wing-coverts pale orange-buff, a shade of which also pervades the sides of the body; quills dusky brown below, light orange-buff along the inner web. Total length 9·5 inches, culmen 0·9, wing 4·85, tail 4·0, tarsus 1·3.

Adult female. Similar to the male. Total length 9 inches, culmen 0·9, wing 4·85, tail 3·8, tarsus 1·2.

The specimens described are in winter plumage, the female being from Playa Vicente (Dec.) and the male from Jalapa (March). In April and May the birds are evidently breeding, and Mr. Richardson obtained eggs in the latter month at Valles in San Luis Potosi. The ruddy tint of the winter plumage is almost entirely abraded, and the colour of the upper surface becomes ashy-olive, while the under surface is remarkably paler than in winter, and the fore-neck and chest are stone-brown, with an ashy tinge, and are not nearly so dark brown as in winter.

Young birds, procured in August, are rather darker brown than the adults, and have distinct mesial shaft-streaks of orange-buff, widening out at the end of the wing-coverts into triangular spots. The under surface of the body is orange-buff, the throat, abdomen, and under tail-coverts being unspotted; the fore-neck and chest rather darker than the rest of the under surface, and heavily spotted with dusky blackish, the feathers of the breast and abdomen with dusky brown ends, producing a spotted appearance.

The figures in the Plate are drawn from specimens in the Seebohm Collection—that of *T. grayi* being from Costa Rica, and that of so-called *T. casius* from Panama. [R. B. S.]

TURDUS CONFINIS (*Baird*)

ST.-LUCAS THRUSH.

Turdus confinis, Baird, Review Amer. B. p. 29 (1864).
Turdus migratorius, var. *confinis*, Coues, Key N. Amer. B. p. 72 (1872).
Merula confinis, Ridgw. Proc. U.S. Nat. Mus. iii. p. 166 (1880).

T. gutture striato: pedibus fuscis, minimè flavis: suprà pallidè brunnescenti-schistaceus: subtùs pallidè ochrascenti-fulvus: hypochondriis minimè rufis.

This very distinct species was discovered by the late John Xantus at Todos Santos in Lower California, in 1860 (Baird, Review Amer. B. p. 29), and in 1881 the type specimen still remained unique in the U.S. National Museum at Washington (Ridgw. Proc. U.S. Nat. Mus. iv. p. 207). In 1883, however, Mr. Ridgway received specimens from Mr. L. Belding's expedition to Lower California, and gave a full description of two birds procured at Laguna in February of that year (Proc. U.S. Nat. Mus. vi. p. 158). He remarks that "the characters of this species, as originally defined by Professor Baird, are not only quite constant, but very pronounced, so that there need be no further reason for denying it the specific rank to which it is clearly entitled."

Mr. L. Belding (Proc. U.S. Nat. Mus. vi. p. 364) says that upon meeting with the first pines in the Victoria Mountains in Lower California he found this Thrush, "but only about a dozen of them were seen, and these were all on the Laguna trail. About half were found singly, one as low as 2500 feet above sea-level." He adds:—"Mr. Cipriano Fisher, an American, who had often hunted deer at Laguna, informed me that these Thrushes were sometimes abundant there. This may be the case when the berries of the California holly (*Heteromeles*), which grows abundantly in the neighbourhood, are ripe.

"The type specimen, shot by Xantus at Los Todos in summer, may have been a straggler from the mountains. Possibly there was a mistake made in recording it, as I suspect was the case with the *Oreortyx picta plumifera* (see Proc. U.S. Nat. Mus. v. p. 533), which is not at present a bird of Cape St. Lucas; and this leads me to remark that I consider the term 'Cape species,' when it covers all the birds from La Paz and south of it, an inappropriate one—inappropriate for the good reason that so few of the so-called Cape species really occur at Cape St. Lucas—its only special advantage as a collecting ground being its well-sheltered harbour, which affords good opportunities for shooting marine species."

A specimen of this Thrush has been said to have been obtained at Hayward's in California (A. O. U. Check-list N. Amer. B. 2nd ed. p. 320).

Adult male. General colour above slaty-grey, slightly paler on the lower back, rump, and upper tail-coverts; wing-coverts and quills dull sepia-brown, externally slaty-grey, more hoary on the edges of the quills; tail dark sepia-brown, margined with slaty-grey, the outermost feather narrowly fringed with white at the end; crown of head slaty-grey like the back; lores blackish, surmounted by a narrow line of white, which extends above the eye; eyelid white above and below; feathers below the eye blackish, shading off gradually into slaty-grey on the ear-coverts; sides of neck clear slaty-grey; cheeks blackish, slightly varied with white streaks; throat white, streaked with rows of

triangular black spots; remainder of under surface of body delicate creamy ochreous-buff, a little deeper in colour on the sides of the body, under wing-coverts, and axillaries; lower abdomen and under tail-coverts white, the latter with slaty-grey bases, the longest ones slaty-grey with white tip; sides of lower flanks light slaty-grey; thighs white with grey bases; quills and tail ashy-brown below. Total length 9 inches, culmen 1·0, wing 5·3, tail 3·8, tarsus 1·15.

Adult female. Only differs from the male in being paler underneath. Total length 9 inches, culmen 0·95, wing 4·9, tail 3·6, tarsus 1·2.

The descriptions are taken from a pair of birds in the Salvin-Godman Collection, received from Mr. C. K. Worthen, of Warsaw, Illinois. They were collected in the Sierra Laguna, in Lower California, in June and July 1896, by Messrs. R. Miller and J. F. Abbott.

The Plate I presume to have been drawn from the type specimen in the U.S. National Museum, as there were no specimens of *T. confinis* in England until recently. Seebohm has, however, left no memorandum as to the origin of his Plate. [R. B. S.]

TURDUS MIGRATORIUS, *Linn.*

RED-BREASTED THRUSH, or AMERICAN ROBIN.

Fieldfare of Carolina, Catesby, Nat. Hist. Carolina, i. pl. xxix. (1731).
La Grive de Canada, Briss. Orn. ii. p. 225 (1760).
Turdus migratorius, Linn. Syst. Nat. i. p. 292 (1766); Seebohm, Cat. Birds Brit. Mus. v. p. 220 (1881).
La Litorne de Canada, Montb. Hist. Nat. Ois. iii. p. 307 (1775).
Turdus canadensis, P. L. S. Müll. Syst. Nat. Suppl. p. 140 (1776).
Red-breasted Thrush, Lath. Gen. Syn. ii. p. 26 (1783).
Merula migratoria, Swains. Faun. Bor.-Amer., Birds, p. 176 (1831).
Turdus (Planesticus) migratorius, Baird, Cassin, & Lawr. B. N. Amer. p. 218 (1858).
Planesticus migratorius, Coues, Ibis, 1865, p. 163.
Turdus migratorius, var. *migratorius*, Baird, Brewer, & Ridgw. N. Amer. B. i. p. 25 (1874).

T. gutture nigro striolato: gastræo reliquo lætè castaneo vel saturatè cinnamomeo-rufo: pedibus brunneis, minimè flavis: pileo nigro; maculâ supralorali albâ: caudâ nigrâ, rectricibus externis albo apicatis.

The Red-breasted Thrush, or American "Robin," as it is most frequently called, is a very widely distributed species in North America. Mr. Ridgway gives its range as "Eastern and northern North America, breeding south to about 35° (farther in the Alleghanies), north to Alaska (Yukon district) and Hudson's Bay, west to Great Plains; occasional in Eastern Mexico" (Man. N. Amer. B. 2nd ed. p. 577).

"During the summer of 1885," writes Mr. Charles Townsend, "I found the Eastern form of the Robin and the Varied Thrush associating among the dwarf pines of the Kowak River region in Northern Alaska" (Proc. U.S. Nat. Mus. x. p. 231). Mr. L. M. Turner says that the Robin was quite common and breeding near Fort Yukon, where it arrives during the latter twenty days of May, and remains until the sharp frosts of September. He did not obtain any specimens from other parts of the Yukon district (Contr. Nat. Hist. Alaska, p. 183).

The following excellent account of the species in Alaska is given by Mr. E. W. Nelson (Nat. Hist. Coll. Alaska, p. 218):—"Throughout the entire wooded portion of the Territory this bird is found more or less numerously during summer, and along the treeless coast of Bering Sea and Kotzebue Sound it appears merely as a straggler in the migrations. Along the Yukon and other rivers of the Territory it is numerous as low down their course as the spruce-forests extend, and thence, towards the mouths, becomes more and more uncommon. A single specimen was found, storm-bound, on the Seal Islands by Elliott, and the natives informed him that it usually occurred annually in this manner. It reaches the Yukon, in the vicinity of the Arctic Circle, about May 15, and nests as far north as the tree-limit extends, in about 69° N. It arrives at Fort Reliance, on the Upper Yukon, May 5, and my earliest record at St. Michael's is the 18th of the same month. Hartlaub records it at Portage Bay on April 30, and again in large flocks at the end of August. During the first half of September it commences its southern migration, but is found close under the Arctic Circle as late as the 1st of November. No appropriate localities for nesting-sites are

afforded on the Bering Sea coast north of Bristol Bay; hence the Robins are limited to the interior at this season. There is one exception, however, on the north coast of Norton Sound, where the spruce-forest approaches the sea, and here they are found in summer. Such stragglers as are found in the vicinity of St. Michael's, numbering several every summer, usually approach the houses for food in early spring and remain but a few hours. They are rather suspicious and easily alarmed, and all I saw were invariably silent, apparently depressed by the forbidding surroundings, and inclined to hasten back to the more hospitable region in the interior. Their nests and nesting-habits are precisely the same in the north as they are in their southern locations, except that in the north they are limited more strictly to the wild woods. All the considerable series brought home by me are typical of the eastern form, and not one is referable to the western *M. propinqua*. They are unknown on the Aleutian and other islands in Bering Sea, except occasionally on the Seal Islands, as mentioned."

Mr. R. Macfarlane records the species as breeding near Fort Anderson in Arctic America, and says that a few were also met with on the banks of the Swan and Wilmot-Horton Rivers, in the Barren Grounds (Proc. U.S. Nat. Mus. xiv. p. 445). The British Museum contains a specimen from Hudson's Bay, where Sir George Back procured one at Fort Franklin; and it seems to be distributed across the continent, as it breeds in Labrador. Here Mr. W. A. Stearns says that he saw a small flock of these Thrushes at Old Fort Bay on the 10th of October, 1881, and also shot a specimen on the 26th of April, 1882. He also found them breeding in the interior in June of the same year (Proc. U.S. Nat. Mus. vi. p. 116, 1883). Mr. Lucien Turner (*op. cit.* viii. p. 235) states that he found the species abundant throughout the country, and breeding plentifully at Fort Chimo, Ungava.

Mr. Hagerup records it as an occasional visitant to South Greenland (B. Greenl. p. 62).

The breeding-range of the species likewise extends throughout Canada; and in Manitoba Mr. Ernest Thompson says that it is a common summer resident in half-open woods, and it is also a plentiful migrant, as well as a breeding bird (Proc. U.S. Nat. Mus. xiii. p. 364). Blakiston found it breeding at the Forks of the Saskatchewan (Ibis, 1862, p. 4), and specimens presented by Mr. B. R. Ross from the Salt River and Fort Simpson are in the British Museum.

The Seebohm Collection contains old and young birds from Toronto, sent by Mr. James Whitely, and Mr. J. H. Fleming has presented to the British Museum several specimens from the same district. At Point du Monts, in Quebec, Dr. C. H. Merriam found the Robin to be a "common summer resident, arriving about the 1st of May and remaining till late in November, one being seen as late as December" (Bull. Nutt. Orn. Club, vii. p. 234).

Messrs. Brittain and Cox (Auk, vi. p. 119) state that it was very common in summer in the Restigouche Valley in New Brunswick, and Mr. Batchelder noticed it on the Upper St. John River. It was rather common at Fort Fairfield, and was abundant everywhere at Grand Falls (Bull. Nutt. Orn. Club, vii. p. 108). Mr. Dwight says that it is abundant in the more open country in summer on Prince Edward's Island (Auk, x. p. 15), and Dr. Bishop found it very plentiful on the Magdalen Islands and breeding everywhere (Auk, vi. p. 150).

The Robin is a common summer resident in the New England States (Stearns, New England Bird-Life, i. p. 1). In the District of Columbia it is a common bird, beginning to nest about the middle of April (Richmond, Auk, v. p. 25). Mr. Warren states that the Robin is abundant throughout Pennsylvania during the spring, summer, and autumn (B. Pennsylvania, p. 224), a few also wintering in the State. Mr. Baily found the species very common all over the open upland in Northern Elk County in June and July (Auk, xiii. p. 297), and Mr. Dwight, in his paper on the "Summer Birds of the Pennsylvania Alleghanies," says that it was abundant everywhere except in the deep woods (Auk, ix. p. 141). In Ohio, Mr. Oberholzer says that it is an abundant summer visitor, a few sometimes remaining over winter (B. Wayne Co. p. 338). Several specimens from

Illinois, obtained in spring and summer, are in the British Museum, as well as others from Michigan. On Mackinac Island, Mr. Whyte says that it is a common summer resident, being "shy and a frequenter of the woods, rarely appearing in the towns" (Auk, x. p. 230).

In Indiana, Mr. Eversmann records it as one of the commonest and best known of the summer residents, leaving so late in the autumn and returning so early in the spring as almost to appear a permanent resident (Auk, vi. p. 30). It is also a summer bird in Minnesota (Hatch, B. Minnesota, p. 442). In South-eastern Dakota, Mr. Agersborg states that the Robin is a not very abundant summer resident, but he has known it to winter on four occasions. Eggs ready to hatch were found as early as May (Auk, ii. p. 277). Dr. Elliott Coues writes:—"Found in abundance at Pembina, where it was breeding in the wooded river bottom. In this latitude the eggs are laid during the middle and latter parts of June, and I scarcely think that more than one brood is reared annually. Further westward the species seems to occur chiefly during the migrations, as most of the country is unsuited to its wants. In September, large numbers were observed in the fringes of trees along the Mouse River. During the second season the birds were again found on the Upper Missouri River and in the Rocky Mountains. On the whole, the species is much less numerous, excepting in the immediate valley of the Red River, than it is in settled and wooded portions of the United States, and probably none pass the winter in this latitude" (Bull. U.S. Geol. Surv. iv. p. 549).

The species breeds in Kansas, according to the 'A. O. U. Check-list' (p. 320) and in Virginia. Mr. Rives (Auk, vi. p. 52) says that in the White Top Mountains, in the last-named State, "Robins were to be found even above 5000 feet," and not far from the top he caught a young bird.

In Kentucky it is a common winter visitant, according to Mr. Pindar (Auk, vi. p. 216), and it is found in Missouri in winter also (Wiedmann, Auk, xiii. p. 219). Mr. Fox, in his list of birds of Roane Co., Tennessee (Auk, iii. p. 315), says that he found it "abundant in large flocks during March, and it was common until the middle of April in 1884, but was scarce after the 1st of April in 1885, the flocks keeping entirely to the woods until the end of March. It was nesting on the 7th of April, 1884."

In the mountains of North Carolina Mr. Batchelder found the species in winter (Auk, iii. p. 314), and Mr. Loomis observed it on migration in Chester Co. (Auk, ix. p. 29), but it breeds in western North Carolina, as is seen from the following note by Mr. Sennett:—"Rarely seen in the lowlands, but common on the summit of Roan Mountain, where I found two nests with eggs in the balsams (altitude 6300 feet). Others were brought to me which had been taken in the woods far from any habitation" (Auk, iv. p. 245). Mr. Brewster likewise observes:—"Irregularly but very generally distributed in western North Carolina, from the lowest valleys, if not quite to the summit of the highest mountains. In the low country it was seen only in or near towns, where it had all the familiar habits of our northern bird; but on the sides and tops of the mountains it occurred miles away from any house or clearing, and in the wildest possible places. It was most numerous at Highlands, and on the Black Mountain between 4000 and 5000 feet. Throughout the entire mountain region its song and habits seemed to be perfectly natural. A female shot on the 27th of May was laying. This and another specimen (male, May 28) are smaller than northern specimens, and the throat in both is nearly immaculate."

Mr. W. E. D. Scott states (Auk, vii. p. 120) that on the Gulf Coast of Florida the Robin is "an irregular migrant, but present in small numbers almost every year, and sometimes abundant. Appears late in December and remains till the 10th of March, which is its latest record. Mr. Atkins says it was irregular in its visits to Punta Rassa, but was common at Key West in December and January, 1887." Messrs. Brewster and Chapman (Auk, viii. p. 138) noticed it on the Suwanee River from March 11th to April 1st, and Mr. Scott in the Caloosahatchie Region between Nov. 21st and April 26th (Auk, ix. p. 214). At Gainesville Mr. Chapman (Auk, v. p. 277) says that it was

"abundant in large flocks, and in full song until December 31, no songs being heard later. The greater portion of their number had departed March 15, but several birds were seen in April. On the 11th, 21st, and 27th, one was observed each day." Mr. Wayne has also noticed the species in the Wacissa and Ancilla regions of Florida (Auk, xii. p. 366).

In Louisiana Mr. Coombs states that the Robin is abundant in flocks during winter, sometimes lingering as late as March 17th (Auk, ix. p. 206). Mr. Beckham, in his paper on the birds of Bayou Sara in the same State, says they appear there in large numbers in February to feed on the fruit of the wild peach, when hundreds are shot for the table (Bull. Nutt. Orn. Club, vii. p. 160).

According to Mr. Dresser (Ibis, 1865, p. 475), this species was "not uncommon near San Antonio in Texas during winter, and found more abundantly during a severe 'norther.'" Mr. Attwater (Auk, ix. p. 345) found it an abundant migrant near San Antonio. Mr. N. C. Brown states that it was irregularly abundant at Boerne; and Mr. C. W. Beckham writes:—"A good many Robins were seen during the winter and as late as March 20th at San Antonio, and they were quite common near Corpus Christi, but whether they were *M. migratoria* proper, or *M. propinqua*, I am unable to say. Of the three specimens collected at Corpus Christi, only one can be referred to the eastern form" (Proc. U.S. Nat. Mus. x. p. 695). Four specimens obtained by Mr. F. B. Armstrong at Corpus Christi in November, and now in the Salvin-Godman Collection, are all true *T. migratorius*.

Mr. Nehrling says that it was very common in the woods in Texas from November to April (Bull. Nutt. Orn. Club, vii. p. 6); and in Western Texas, Mr. Lloyd found it tolerably common in spring and fall, a few wintering in the river bottoms and abundantly further south (Auk, iv. p. 298).

From the above note of Mr. Beckham's, it is evident that both eastern and western races of the "Robin" winter in Texas, as they do further south. The Salvin-Godman Collection contains examples from La Parada (*A. Boucard*) and Villa Alta in Oaxaca (*M. Trujillo*). The specimen shot by Mr. Salvin at Coban in Vera Paz, Guatemala, in January 1860, is also referable to the true *T. migratorius*.

In the West Indies it is only known as an accidental visitor to Cuba (Cory, Auk, iii. p. 3).

A specimen of the American Robin was found in Heligoland on the 14th of October, 1874, and Gätke believed that it was a visitor from Asia, as "there occurred in that year a very powerful migration of species from the east" (B. Heligoland, Engl. ed. p. 255). The species has been captured in England at Dover, in the spring of 1876 (Harting, Zool. 1877, p. 14), and on the Continent of Europe at least four times, once near Berlin, twice near Vienna, and once in Bohemia.

I have taken the following account of the habits of the American Robin from the recent work of Mr. Nehrling, as he not only gives very good original observations, but also embodies the pith of those of other observers:—

"The early spring flowers still sleep beneath snow and ice, the cold north and west winds still wildly sweep the northern part of our country. All nature seems dead. Only a small number of feathered winter visitants have come from the far north and move about in the trees and shrubbery of the garden. Crossbills and Redpolls have already departed to their northern home. A few Kinglets, Tree-Sparrows, Titmice, and Cedar Birds swing themselves on the snow-laden boughs of the pines and spruces. Suddenly, and entirely unexpectedly, a loud song of jubilation is carolled from the top of a neighbouring elm. There, in the top of yonder dark green pine is perched another one of these singers. They are Robins, just returned from their winter quarters, heralding in reverberating jubilation the approach of spring. This, our beautiful familiar Thrush, certainly merits the name 'harbinger of the vernal season,' for it is one of the first of our birds to arrive from the south. In the Northern States it often makes its appearance before the middle of March, though the great majority do not arrive till the end of that month. The inclement weather which often persists for several weeks, and the consequent scarcity of food, sometimes force the bird to return

southward again. Usually, however, it will remain in spite of the wintry garment covering nature, searching for food in spots from which the snow has melted, and enlivening its habitation with its powerful music. In the Northern States the whole of April is an inclement, changeful month. It is only in May, a month which often, too, retains traces of winter, that our birds of early arrival find favorable weather and abundance of their principal insect food.

"Probably none of our birds has become so esteemed a favorite with the American people as the 'Robin.' The pilgrim fathers of Massachusetts called this Thrush the Robin, or Robin Redbreast, because it reminded them of the affectionate and beloved Robin of their English home. The love of the latter bird together with its name passed over to the somewhat similarly-colored Thrush of their new country. Hence to this very day the people of New England highly prize and in every way protect the Robin. It has, thanks to this protection, not only multiplied greatly, but has taken up its home in numbers in villages and even in cities. Its familiarity, its early arrival from the south, its sonorous flute-like song, and its wide distribution have contributed not a little to this bird's favorable reception among us.

"The greater number pass the winter in the Gulf States. I have observed them in large flocks in the forests of the lowlands of Texas and in the hummock-woods of Florida, where the fruit of different species of holly and the sparkle-berry furnish an abundance of food during the whole winter. Even in the middle of February I have seen them in great numbers in the sugar-cane fields and in the extensive cypress-swamps of southern Louisiana. During mild winters single individuals may be found in protected spots even in New England, where they subsist on the remains of wild fruits and berries. More commonly they pass the winter in the Middle States. In Wisconsin the Robin is very common everywhere. In the beautiful, well-watered forests of that State the bird is almost as numerous as in the cultivated districts. In Illinois and likewise in the south-western part of Missouri and northern Arkansas it is also a common summer resident. In the last-named localities it arrives, according to the weather, from the beginning to the end of February. In the Gulf region the Robin appears only in winter.

"All our Thrushes, with few exceptions, are timid and shy, and shun the society of man. Most of them retreat to the deep woodland solitudes far from the abodes of man. All this is different with the Robin. Though originally a true forest bird, it has now everywhere attached itself to man, and, though still retaining its former sagacity and vigilance, has become quite confiding and fearless. You can find the Robin everywhere, in field and forest, in meadow and marsh, on hills and in valleys, in parks and gardens, and even high up in the mountains. It may be met with invariably in the woods where the trees and undergrowth are not too dense. The Robin's favorite haunts, however, are districts where woods and fields alternate, and where there are orchards and swampy meadows. It breeds even in wooded swamps, especially where evergreens and deciduous trees grow together. In the cultivated parts of the entirely tree-less western prairies the Robin has become abundant since orchards were planted.

"In Wisconsin and other Northern States the Robin will begin to build its nest as early as the middle of April, providing the weather is fair. In south-western Missouri it commences as early as the end of March. I have found the nests at a height of from two to thirty feet from the ground, in the most various positions and situations; on trees, on high stumps, in the roots matted together with soil of trees prostrated by storms, in corners of rail-fences, on rafters and under the eaves of old and uninhabited log cabins, in sheds and old barns, on all kinds of fruit and ornamental trees, in bowers formed by the wild grape and other climbing plants, &c. With decided preference it selects a nesting site in the dense coniferous trees now so generally used in ornamental gardening. It probably chooses such places because the nest is more protected from cats than in other situations. It is remarkable that such an intelligent bird as the Robin does not always display the necessary

precaution in selecting a spot for its nest, for the structure is sometimes built in a very exposed part of a tree, so that it may be seen from a distance, or it is located in the corners of rail-fences close to a country road, or in the immediate vicinity of a dwelling. Indeed it is never much concealed and is one of the most easily found nests. The structure is composed externally of grass-blades, plant-stems, bark-strips, moss, and fine rootlets; then follows a layer of mud which is moulded into a smooth cup-shaped cavity lined with dried grasses. The eggs, numbering five on an average, are of a uniform, rich, greenish-blue colour, without spots. Only the female sits on the eggs, and is not fed by the male, on which account she has to leave the nest for a short time each day to look for food. At such times the male stands guard near the nest, singing his finest melodies. After about thirteen days brooding the young hatch, and are faithfully cared for and defended by both parents. The first brood is usually followed by a second and further south there is often a third. During the breeding-season the male is all vigilance and no enemy can easily succeed in catching him off his guard. The loud and shrill warning note, which sounds sometimes like 'chip, chip,' announces the stealthily approaching Cat, the Skunk snuffing about in the undergrowth, as well as the Raccoon roaming about among the boughs, and the Hawk overhead gliding in large circles through the air. But the Robin is not content with uttering its screaming call of distress. It will courageously attack every intruder as soon as he approaches the nest. At the male Robin's alarm-note all the Robins nesting in the neighbourhood assemble to take part in the contest. They try to frighten and defeat the enemy by screaming loudly, flitting to and fro with great rapidity, and going through other manœuvres. Small intruders almost always retreat quickly. While still a small boy in my native State, Wisconsin, I remember once climbing a pine-stump about twelve feet high to examine a Robin's nest built on its top. While I was climbing up, the angry pair whizzed past my face with loud screaming. The noise at once assembled two or three other pairs, and I was soon so courageously and persistently attacked by the birds, some flying right into my face, others whirring past loudly snapping their beaks, that I had to jump down and run off at full speed. The Robins which nest farthest from man are, as a rule, the most pugnacious. It is remarkable, but easy of explanation, that one may examine a Robin's nest in a garden without the birds being in the least angry or uneasy. They have doubtless been convinced by experience that no one intends to molest them.

"Besides the cry of alarm we frequently hear other characteristic notes during the breeding-season. 'Durick' and 'Tuck-tuck-tuck' may often be heard.

"It is during this season that the Robin's truly melodious and pleasing song is loudest. A harbinger indeed, it is the first bird to carol from the tree-tops the near arrival of the spring. The song, though simple and modest, is not without effect at such a time in the snow-covered, sadly silent landscape; it fills desolate nature with indescribably joyous life and gives voice to man's longing for the warm, soft, and mild breezes of spring and the odor of opening flowers. The Robin's manner of singing is significant. While many of our birds choose a concealed bushy spot when they sing, and moreover accompany their song with lively movements, the Robin selects an exposed spot, usually the top of a tree, and pours forth its song for hours from this lofty perch. It sits quietly, with its bill directed to the sky, and sings most earnestly and persistently early in the morning, as soon as the dawn appears in the east, and in the evening long after the fading of the bright sunset. I have heard a few sing during the hot hours of June and even of July, but this is a departure from the rule. There is great difference in singers: some sing with such excellence that they satisfy even the most fastidious hearer; others again are decidedly inferior. I have observed the finest songsters in the so-called 'mixed woods' of Wisconsin, where the music of the gurgling springs and gushing brooks, and the weirdly charming whisper in the pines accompanied their songs; the poorest singers I have found in the monotonous 'black-jack' regions of Missouri. Many students

of bird-life, and even our great Audubon, compare the Robin's song to that of the European Blackbird, and maintain that the song of both birds is very similar. Judging from my own experience, which is confined to caged Blackbirds, I would say that this is only conditionally true, viz., so far as the voice, the note itself, is concerned. Both birds, which are very near relatives, have a powerful and beautifully flute-like whistle, but the Blackbird's song is more continuous, more modulated, the Robin's briefer, more monotonous. The Blackbird is one of the very best and most superb of songsters, and the comparison of the two birds shows that our Robin is to be classed with the finest of singers. What makes the song of the Robin especially valuable, is the fact that it is uttered in the immediate neighbourhood of our rural and even city homes, where every lover of nature can delight in it during the pleasant season of the year. The loud flute-like, highly melodious song poured forth in magnificent maestoso involuntarily reminds one of the clear, quietly flowing notes of a sacred song. Whenever the bird sits high aloft and sends its voice to the distance, all the other male Robins of the neighbourhood feel duty bound to enter into competition. Soon three, four, and even more, may be heard in loud chorus. This is usually the case during evening twilight, and then one may hear quite a number of birds all striving to outsing one another, while they make the surroundings echo with the powerful vibration of their jubilant, exultant melody. What is a northern garden without its joyful songsters, the Robins? Who can fail to love them? Even the farmer, if he does not lack all sense of beauty in nature, is delighted to see a pair of these fine, lively birds, so versed in melody, take up their home in his garden, for they belong to the first of living beings to hail him with the greeting of morning when he enters the open air at early dawn.

"But the Robin is also a very useful bird. Its food consists during the greater part of the year of insects, which are usually captured on the ground. It consumes incalculable numbers of the very destructive cut-worms, canker-worms, beetles and their larvæ, grasshoppers, borers, snails, caterpillars, and many others. This usefulness increases as the young are hatched. Then the parents destroy an immense number of insects, confining their attention almost entirely to those species that do great damage to vegetation, destroying in every conceivable manner fruit-trees and ornamental plants as well as vegetables, and working mischief which man is generally helpless to remedy. This is likewise true of all our other small garden birds, such as the Catbirds, Thrashers, Mocking-birds, Bluebirds, Vireos, Titmice, Warblers, Orioles, Kingbirds, and others. If the Robin does take a few ripe cherries and other small fruits, it is no more than just that it should receive this reward for its usefulness. The few berries, grapes, &c. consumed by this bird are not to be compared with the great number of insects it destroys. As it does not occur in flocks, except during migration and in winter, it is evident that it can do but very little harm.

"'The Robin,' says Dr. Elliott Coues, 'is a great eater of berries and soft fruits of every description; and these furnish, during the colder portion of the year, its chief sustenance. Some of the cultivated fruits of the orchard and garden are specially attractive, and no doubt the birds demand their tithe. But the damage done in this way is trifling at most, and wholly inconsiderable in comparison with the great benefit resulting from the destruction of noxious insects by this bird. The prejudice which some persons entertain against the Robin is unreasonable; the wholesale slaughter of the birds which annually takes place in many localities is as senseless as it is cruel. Few persons have any adequate idea of the enormous—the literally incalculable—numbers of insects that Robins eat every year. It has been found, by careful and accurate observations, that a young Robin, in the nest, requires a daily supply of animal food equivalent to considerably more than its own weight! When we remember that some millions of pairs of Robins raise five or six young ones, once, twice, or even three times a year, it will be seen that the resulting destruction of insects is, as I have said, simply incalculable. I have no doubt that the services of these birds, during the time

they are engaged in rearing their young alone, would entitle them to protection, were the parents themselves to feed exclusively upon garden fruits for the whole period. But at this time the diet of the old birds is very largely of an animal nature; nor is this the only season during which the destruction of insects goes on. Upon the first arrival of the main body of the birds early in the spring, long before any fruits are ripe, they throw themselves into newly-ploughed fields, and scatter over meadows, lawns, and parks, in eager search for the worms and grubs that, later in the season, would prove invincible to the agriculturist, were not their ravages thus stayed in advance by the friendly army of Robins.

"'The bird is now very generally protected by legislative enactments, during a portion of the year at least; it is to be hoped that the laws may be made still more stringent, and the 'close' time become co-extensive with the year itself. As an object of 'sport' the Robin can possess no attractions save to idle children of larger or smaller growth; while its commercial value, as an article of food, is wholly inconsiderable. There are, therefore, weighty and cogent reasons why the Robin should be protected by law at all seasons; for there would rarely, if ever, be difficulty in gaining permission, upon proper representation, to destroy the very few that might be required for scientific purposes.'

"Among wild fruits the Robin is particularly fond of elder- and poke-berries. In winter these birds are unusually common in the beautiful hummock-woods of Florida, where the mealy sparkle-berry and the holly with its shining vermilion berries grow in abundance.—The plumage of the bird's breast is often stained with the violet juice of the poke-berry.

"From early in the morning to late in the afternoon these birds are busy almost without interruption. It is only during the hot part of the day that they are somewhat less active. Their flight is smooth, rapid, and skilful, and does not lack grace and beauty. To one who has seen during migration flocks of several hundred individuals rapidly flying over the forest trees, it seems easy to understand how they can traverse such an immense expanse of country in so short a time. They move about nimbly among the boughs and are perfectly at home on the ground. They run about quickly, frequently stand still, raise the tail with a jerk and simultaneously lower the wings, turn the head to one side to listen, and then hop along again. This jerking of the tail and wings while running about on the ground is a common trait of all the true Thrushes.

"Towards autumn the Robins unite in larger or smaller flocks and travel south. They now prefer the woods along the banks of rivers flowing southward. Especially the Mississippi, Wabash, and others, are such highways during migration. In their winter quarters they are very shy; rarely will they approach a human dwelling, preferring to stay in the depths of great forests, where they look for food among the dead leaves which cover the ground.

"Like all of our smaller birds the Robin has many enemies. In gardens the cats catch many young and even old birds, in the woods Squirrels, Raccoons, Opossums, and many birds of prey kill them. Their greatest enemy, however, is man. In the South almost incalculable numbers are killed by white and black pot-hunters, and in many localities of the North many hundreds of almost fully-fledged young are taken from their nests and meet their doom in the kitchen. Such unreasonable slaughter should be stopped everywhere by the rigorous execution of the law for the protection of birds."

From the observations of American naturalists it is evident that the Robin combines many characteristic habits of the European Blackbird (*Merula merula*) and the Fieldfare (*Turdus pilaris*), but this latter is never seen in such wonderful numbers on migration as *T. migratorius*. I quote the following notes from Dr. W. W. Cooke's 'Report on Bird Migration in the Mississippi Valley,' as being one of the most interesting records of the migration of a bird ever published:—"The Robin is a common summer resident in Manitoba and throughout the Mississippi Valley, except in the extreme

southern portion. In winter it is abundant in Louisiana and in eastern and southern Texas, it also winters irregularly over most of its United States range. It seems to be the best known bird in the Mississippi Valley, and many more notes were contributed on it than on any other species. It should be possible, therefore, to determine its movements with considerable accuracy. All through December, 1883, it was found in abundance throughout southern Illinois, Missouri, and Kansas, but the extreme cold of the first week in January, 1884, drove it farther south into its real winter home. During the larger part of this month the bulk of the Robins (probably even 90 per cent. of them) were south of the parallel of 37°. This is south of the usual winter limit of the species, the northern boundary for ordinary winters being about latitude 39°. It must not be supposed, however, that Robins never spend the winter farther north. The fact has been repeatedly demonstrated that nature has bestowed on them strong constitutions, so that if food is plenty they can withstand severe cold. Every year some of the northern observers report Robins wintering about their stations, and the winter of 1883–84 was no exception. One was seen, January 1, in north-western Indiana; another, January 11, at Vermillion, Dak.; and finally, at Hastings, Minn., 500 miles from his brethren, one was seen December 28, 1883, with a flock of Pine Grosbeaks (*Pinicola enucleator*), apparently at home and determined to spend the winter. It was seen repeatedly, and actually remained till spring with the same flock of Grosbeaks.

"The distribution of the Robin in its winter home depends entirely on the food-supply; where food is plenty, there the Robin remains, though observers a few miles away may not see one all the winter. At Manhattan, Kans., berries are abundant, and during the winter of 1883–84, as in previous years, flocks of five hundred or more individuals were constantly seen, while observers at stations but a short distance away reported no Robins from December until February. Manhattan, Kans., is the most northern station at which flocks of Robins remained during the winter. So far as can be learned, but few wintered in Indian Territory, nor did northern Texas fare much better; but they were reported as wintering in immense numbers along 300 miles of the cañon of the Nueces River in south-western Texas. In Concho and Tom Green Counties, Mr. Lloyd states that they are tolerably common in spring and fall, and that a few winter in the river bottoms. They were reported from all the Southern States, at some points as abundant, at others as rare.

"In the early spring of 1884, as if disliking winter quarters, the Robins pushed north at the first breath of warm weather. Regardless of the certainty of being overtaken by cold, they hurried on, and from January 21 to February 3 occupied all the country from which they had been driven by the low temperature of the first of the year. This movement was confined to comparatively few individuals, and while the scouts had advanced to latitude 39°, or even a little farther north—single birds having been seen at Burlington, Iowa (lat. 40° 50′), and at Lake Mills, Wis. (lat. 43° 06′)—the main body still remained in camp three or four hundred miles to the south. Then followed a whole month of waiting, during which time adventurous birds pressed northward, only to be driven back by snow and ice; nor was the real advance commenced until March 9. From that date until they had passed our northern boundary their advance was constant and more or less uniform. The regular advance of the van appears to have been as follows:—From March 9 to 15 they spread over Illinois and eastern Nebraska to latitude 41° 51′; March 16 there was a slight advance in Iowa; March 17 and 18, no record; March 19 and 20, an advance to latitude 43° in Iowa, Illinois, and Wisconsin, but not in Nebraska; March 21, a sudden spreading over Wisconsin to latitude 45°.

"By March 24 the rest of the stations in Wisconsin had reported, and an equal advance had taken place in Minnesota, so that by this date the van was at latitude 45° along the whole line. North of this all the stations are in the valley of the Red River of the North. In this valley the first arrivals reached latitude 47° April 3, and just one week later appeared at Oak Point, Manitoba (lat. 50° 30′). The fact that the spring migration on the Western plains in 1884 was several days

behind the migration in the same latitude farther east is clearly shown by the record of the Robin. At Ellis, Kans. (lat. 38° 55′), the first arrived March 21, but in Illinois it reached that latitude six weeks earlier. At Menoken, Dak. (lat. 46° 58′), it did not arrive until April 29, while at Frazee City, Minn. (lat. 46° 52′), the high, bleak situation answers to a western position, and the Robins did not come until April 21.

"The bulk of the species travelled much behind these advance guards in the lower part of the course, but, moving faster than the scouts, by the time it reached the end of the march, was but a few days in the rear. The bulk reached latitude 39° between March 12 and 17; then moved to latitude 43° March 23 and 24; to latitude 45° 30′ by March 27 and 28; to latitude 47° April 5, and to Portage la Prairie, Manitoba, April 20. From the few scattering notes on the subject, we may guess that the bulk left latitude 35° March 7, latitude 37° March 25, latitude 39° March 31, and latitude 41° April 10. By the middle of April, in all the country south of latitude 43°, all Robins had left those places where they did not intend to breed, and at the other places had settled down to summer numbers. This is true not only of the Robins, but also of all those species whose records are sufficiently voluminous to afford a fair guide to their movements. This overtaking of the van by the rear may be explained in either of two ways, and it is probable that both causes have some effect. The individuals forming the van always consist of old birds, and these arriving at the place where they nested the previous year stop to breed, leaving the advance to be made by those behind, giving the main body a chance to come close to the van; and, secondly, while the van is being constantly retarded by storms and cold, the rear travels in more settled weather and would naturally move faster.

"In the fall of 1884 the bulk of Robins left Elk River, Minn., September 27, and the last was seen there November 7. At Hastings, Minn., none were seen after September 29. At Des Moines, Iowa, the bulk was recorded as leaving October 25, and at Mount Carmel, Mo., October 15. As already noted, many straggling Robins remain during the winter in sheltered localities much farther north than the regular winter home of the species. At Manhattan, Kans., during the winter of 1884–85, they were as abundant as usual, while a few were noted at various points for the next 200 miles southward. A single bird was seen at Morning Sun, Iowa, February 6. One remained at Newton, Iowa, all winter; at La Porte City, Iowa, they were common all winter, and even as far north as Hastings, Minn., 400 miles beyond its ordinary winter range, two birds were seen February 27. These may have been migrants a month ahead of their fellows (the next individuals of which were seen April 1), but it is more probable that they had wintered in that vicinity, as the neighboring bluffs along the Mississippi River furnish numerous well-sheltered spots, suitable for winter quarters. Mr. Alexander Scougal, of Sioux City, Iowa, sent the following interesting note:—

'Among our winter birds there is one in particular which I wish to mention. It is the male Robin. Hardly a person will believe that there is a Robin in the State during the winter; but on December 23, 1883, I shot a male Robin but took no particular notice of it except to skin it. Last December (1884), during the holidays, I took my gun and started for a dense thicket, almost impenetrable by man or dog. There I saw a number of Robins, and shot three. One of them was wing-tipped and when caught began to call, and immediately there were thirty-four Robins sitting around me, making noise enough to deafen one. I held the one in my hand for a long time so I could look at the rest; all of them were male birds, not a female could be seen. I found a house in the woods and asked the man about them. He informed me that they had been there all the winter, but he was not able to distinguish males from females. I cannot say positively that the female does not stay here in the winter, but I never have seen one nor heard of any here during that season; so I think it must be rarely if ever seen. The day I saw the birds was December 27, and the temperature was 23° below zero. Again, January 2, 1885, I was there and saw the Robins a second time; it was

then 17° below zero. I found then in their stomachs wild grapes and seeds from a small bush (probably *Symphoricarpus*). The trees in that part of the woods were covered to their top with grape-vines, and many other vines grew underneath. The birds were in good condition, and seemed as lively as in midsummer. Hence it would seem that these old birds, being the last to migrate, do not go so far south as the rest of their species, but get into these dense thickets and are unnoticed by most people, until with the first warm weather they fly out into the open fields. The first day or two of February were warm, the mercury rising to 46° above zero, and these Robins were seen by a good many people in the city. A cry went around, 'Spring is coming, we have seen a Robin.' But February 5 cold weather returned, and now (February 16) the thermometer ranges from eight to fourteen degrees below zero. The people wonder where the Robins have gone, but if they would go to the dense thickets of Walker's Island, on the Nebraska side of the river, they could find the same Robins as lively as ever.'

"The same warm wave of February 2, just spoken of by Mr. Scougal, caused Robins to appear at Vermillion, Dak., a few miles north-west of Sioux City. A large flock was seen at the same place February 7. From points south of latitude 38° records of 'firsts' can hardly be taken as necessarily indicating northward migration; but the dates given when the Robins became common show when the general northward movement began."

Mr. Ernest Thompson gives a good idea of the migration of this Thrush in his paper on the Birds of Manitoba (Proc. U.S. Nat. Mus. xiii. p. 635):—"On April 28, 1882, I drove to the spruce bush. The country seems flooded with Robins, and the last mile of prairie, just before entering on the wooded and sandhill region, was covered with an immense straggling flock. They were to be seen chiefly on the ground or making short flights, and the general movement of the birds was northward. There must have been several thousands of birds in the flock."

It has already been noticed that even in Canada and several of the northern and eastern United States the present species remains occasionally through the winter. A specimen obtained by Mr. E. W. Nelson in Alaska in November is in the Henshaw Collection. Mr. Chamberlain has recorded it as wintering in New Brunswick (Bull. Nutt. Orn. Club, viii. p. 11), and Mr. Dwight says that an occasional bird remains on Prince Edward Island through the winter, subsisting on the berries of the mountain ash (Auk, x. p. 15). Mr. Brown says that the species wintered in unusual numbers in and about the city of Portland, Maine, in 1888–89 (Auk, vi. p. 283).

Mr. Comeau (Auk, viii. p. 317) writes from Godbout, in Quebec:—"I desire to place on record what is to us here a most unusual occurrence, viz., the wintering of the Robin (*Merula migratoria*) on the north shore of the St. Lawrence. On looking over my notes on the species, extending over twelve years, I find that the latest bird previously seen was noted on December 5; other years from 25th to 30th November. Arrivals in spring have been noted from April 18 to May 6. This year I kept recording their occurrence day after day, always expecting that it was going to be the last seen, but they are here still (Feb. 4, 1891), and intend to stay I believe. Every day when the tide falls, leaving the rocks or some shoals bare, they flock to these places in hundreds for the purpose of picking up gravel and small shells; when these places are covered with ice, as often happens, they hop from one piece of ice to another, following the shore-line, evidently thinking (if birds can think) there must be something wrong. I have shot several from time to time to see what their crops contained, and invariably found in them small shells, principally minute, blackish whelks, gravel, and the fruit of the mountain-ash, and sometimes bits of seaweed.

"All the birds I shot were in first-rate condition. The winter has been a very severe one—Feb. 2 and 3, 24 and 32 degrees below zero (Fahrenheit)—but this does not seem to truoble them at all. The reason for their wintering here is possibly due to the enormous crop of mountain-ash berries."

The following account of the bird's song is given by Mr. Bicknell (Auk, i. p. 126):—"As a general rule our summer song-birds come to us in the spring in full voice; but an exception is often made by the Robin. As a few Robins may be with us all winter, it is not always easy to tell just when the first spring birds come; but the observations of several years clearly show that, as a rule, first arrivals are songless. But singing is rarely delayed after the migration has well begun; and when this has been retarded by untoward weather, and finally starts with full volume, then the advance guard are usually song-bearers. My records show a range of over three weeks in the time of the beginning of song in different years, from February 27 to March 21. Both of these dates are, however, exceptional, and represent the extremes of an early and late season. Usually singing begins during the second week of March.

"The Robin continues well in song up to the middle of July, after which there is usually a perceptible decrease in the number of singing birds, and the time of singing becomes more restricted to the marginal hours of the day. My notes of the singing of the Robin in August, though usually extending through the month, rarely form more than a disconnected record. The inclination towards song is now declining, and it depends, during the first part of the month largely, and during the latter part entirely upon favorable conditions, whether there be any song at all. Thus in a season of drought occasional brief songs in the early hours on favorable days, with intervals of silence, may fill out the record of the month, whereas a reasonable consecutive record will result from a cool and wet season.

"September is eminently their month of silence. Their primary song-period may extend feebly beyond the end of August, and rarely an imperfect song may be heard in the following month, but until its latter days silence, excepting the ordinary call-notes, is the general rule.

"The secondary song-period is introduced with much regularity in different years in the last days of September. From 1878–81, my record runs: September 27, 26, 28, 25. But unfavorable weather may postpone the beginning of the second song-period until October. The first songs are usually subdued and broken, but soon acquire the normal character, and sometimes continue with little interruption through the month of October; but again there may be an almost complete intermission between the first or second and final week of the month. Sometimes when this is the case, multitudes of the birds arrive from the north about the third quarter of the month, bringing song with them, and in the last week, if the weather be damp and cloudy, numbers may be heard singing with almost the freshness and vigor which characterise their song in April.

"When the vast numbers of Robins which pass southward at this season have departed, the species rapidly becomes uncommon. Dates of last songs fall between October 21 and November 1. In two years I have no record later than the 8th, but it seems not unlikely that in these years transient final days of song were missed. It is, however, not improbable that, if subsequent to the beginning of autumn song the weather should prove unfavorable, the second song-period may be allowed to lapse.

"Through the latter part of August many Robins may be seen flying about, minus remiges and rectrices, in varying number. Adults of both sexes taken in the second week of October have the new plumage perfected with the exception of some of the smaller feathers."

Mr. Ernest Thompson writes:—"The song is first heard in the morning when the dawn is well advanced, the Robin being more tardy to raise the matin song than many of his compeers. It is heard until the middle of the fore-noon, then usually ceases until near sunset, when it recommences and continues till dusk. I have not yet noted this species singing by night. If, when singing, the bird is slightly startled by some noise close at hand, the loud cheery note is stopped, or at least altered, so that, although the song goes on, it is very faint, and sounds as though coming from a great distance, and closer inspection will show the bird's bill to be shut. This was first pointed

out to me by Dr. Brodie, but I have noted the same habit in several other species. The loud rolling notes will remind Europeans of the voices of the Song-Thrush and the Blackbird, but there is a terminal bar of frequent occurrence that recalls the metallic notes of our own Wood-Thrushes and reminds us of their near kinship to the Red-breasted Fifer" (Proc. U.S. Nat. Mus. xiii. p. 685).

Mr. Brewster has written (Auk, vii. p. 360) a most interesting account of the roosting-places of this Thrush during the summer months. It is too long to quote *in extenso*, but I give some extracts:—"Robins, while still in their summer haunts, form roosts which are resorted to regularly night after night and season after season by hundreds or even thousands. Such gatherings, however, are by no means uncommon in Massachusetts, and they doubtless occur throughout the entire North, wherever Robins abound.

"South of the Charles River, in Longwood, about two and one half miles from the Norton roost, I found a considerable colony on the evening of Aug. 26, 1884. Their rendezvous was of the usual character—dense, swampy woods of oak and red maple. I did not again visit this place until Aug. 22, 1890, when I found that all the trees in the swamp had been killed by inundation. Nevertheless the Robins had not deserted the woods, but in fully their former numbers were roosting in a cluster of tall red maples, white oaks, and chestnuts which, standing on a knoll above the reach of the water, had escaped the fate of their fellows. The entire area covered by the living trees was not over one quarter of an acre.

"At the Beaver Brook roost Mr. Faxon, with the help of an assistant, counted 1883 incoming birds on the evening of Sept. 2, 1889. His next largest count, made without help Aug. 28 of the same year, was 1180. At Melrose Highlands, Mr. Torrey, unaided, counted 1267, July 29, 1889, and 1517 on the same date in 1890. On July 28, 1890, with an assistant, he counted 2314. In both cases the assistant stood near his principal and was employed merely to divide the labor, no more ground being covered than on the other occasions.

"A good many birds approach the roost by short, interrupted flights, lingering on the way in isolated trees or groves, where they often sing for a minute or two. At the Longwood roost more than two thirds of the entire colony arrive in this manner, probably because the swamp is in the bottom of a deep hollow surrounded by hills crowned with woods or orchards which afford convenient places for alighting.

"The first comers reach the roost an hour or more before sunset, but for the next thirty or forty minutes the arrivals are few in number and at wide intervals, although they gradually increase. There is rarely anything like a continuous or heavy flight until within fifteen or twenty minutes of sunset, but rather more than half the total number usually pass in before the sun has dipped below the horizon.

"For about fifteen minutes after sunset the rush continues unabated. It then begins to slacken, always diminishing more rapidly than it grew, and often ending with somewhat marked abruptness. Stragglers, however, continue to arrive until it is too dark to see them distinctly except against the light in the western sky.

"The earlier comers usually alight on the topmost twigs of the taller trees and sometimes, after a brief rest, fly back to the fields to feed, as if conscious that they were ahead of time. If there is a brook or spring near at hand many birds visit it to drink or bathe. They are also fond of collecting in the upper branches of dead trees to bask in the last rays of the sinking sun, and a rum cherry tree loaded with ripe fruit is an irresistible attraction. But when the rush is at its height, there is rarely any loitering. Each bird, as it gains the woods, plunges into them at once, and with such directness and decision that one feels sure it has gone straight to its own particular perch. This, however, is evidently not the case, for during the entire period covered by the bulk of the flight, indeed for some time after the last belated straggler has stolen in, there is incessant and general agitation of the

foliage as if a strong wind were blowing through the trees. This is caused by the movements of innumerable birds who, in the attempt to secure positions nearer the centre of the roost, or in thicker foliage, are continually darting from place to place, often plunging headlong into the branches or dropping through the leaves with much awkward and noisy fluttering. Either because of inability to see distinctly in the dim light, or with deliberate design to dispossess their fellows, such restless spirits often try to appropriate perches already occupied, and the squabbles which ensue, although quickly ended by one or the other giving way, are accompanied by outcries which rise above the general din of shrill, varied voices. If it is early in the season there is also more or less singing.

"But the most characteristic and peculiar sound to be heard in a roost is that produced by the myriad wings constantly striking the leaves. This closely resembles the patter of hail or large rain-drops on dry foliage at the beginning of a shower. There is also an equally steady and similar but slighter sound of falling excrement, with which the ground and bushes beneath the roost are so thickly covered at times as to look as if sprinkled with snowflakes. As the darkness deepens the tumult gradually subsides. One by one the shrill voices are hushed and the nervous flutterings cease, until, when the light has quite gone from the west and the stars are all out in the great dome overhead, a person might pause under the trees and listen intently for minutes without hearing anything save the occasional drowsy chirp or faint rustle of some half-awakened bird—sole tokens of the feathered host bivouacking in the leafy canopy above."

Adult male in breeding-plumage. General colour above ashy-grey, the hind-neck and mantle mottled with black bases to the feathers, the lower back, rump, and upper tail-coverts uniform ashy-grey, clearer towards the latter; wing-coverts like the back, with dusky blackish bases; greater coverts and quills blackish, externally ashy-grey, inclining to hoary grey on the margins, the primaries with a narrow edging of white; tail-feathers black, narrowly fringed with grey, the three outer feathers with white tips, represented by a large spot of white on the outermost, a small band at the tip of the penultimate, and a narrow fringe at the end of the third feather; crown of head and nape black, as well as the sides of the face, ear-coverts, and cheeks; the black on the nape tolerably well-defined and distinct from the hind-neck, which is mottled with black bases to the feathers as on the mantle; above the lores and above the eye a few white feathers, not sufficient to form an eyebrow; below the eye a spot of white; fore part of cheeks streaked with white; chin white; throat black, the feathers margined with white, producing a streaked appearance; under surface of body from the fore-neck downwards bright cinnamon-chestnut, white on the lower abdomen, lower flanks, vent, thighs, and under tail-coverts; the sides of the lower flanks ashy-brown; under wing-coverts and axillaries cinnamon-chestnut, the latter with obscure white margins; quills ashy-brown below: "bill lemon-yellow, dusky along the sides and at the tip; feet pale brown; iris hazel" (*J. J. Audubon*). Total length 9·5 inches, culmen 0·95, wing 5·2, tail 3·65, tarsus 1·3.

Adult female in breeding-plumage. Like the male, but not so rich in colour below, and with remains of whitish margins to the feathers of the under surface; the hind-neck and mantle not so much mottled with blackish centres to the feathers. Total length 9·4 inches, culmen 0·95, wing 5·2, tail 3·6, tarsus 1·35.

Nestling. Dusky-grey above, mottled with black margins and longitudinal ochreous-buff centres to the feathers; the lesser and median wing-coverts with triangular spots of buff at the ends, the greater series edged externally with ochreous-buff, like the quills, and tipped with buffy-white; inner secondaries margined with white at the ends; lower back, rump, and upper tail-coverts more ashy-grey, narrowly lined with buffy-white shaft-stripes and faint blackish margins; tail-feathers as in the adults, and the white spots on the outer ones very well marked; crown of

head and sides of face black; throat and cheeks white, slightly tinged with yellow, but without spots, excepting a broad malar line of black spots; remainder of under surface orange-rufous, deeper on the sides of the body, the feathers edged with black, broadly on the fore-neck and breast, and less distinctly on the abdomen and under tail-coverts, which are white.

Young birds, after their first moult, are dark olive above, the black feathers of the crown being edged with dark olive, so that there is often scarcely any black to be seen. The white eyebrow, as pointed out by Mr. Ridgway, is not interrupted, but appears to be continuous above the eye, though not reaching far above the ear-coverts. The median and greater wing-coverts have ochreous-buff or whitish margins; the rufous colour of the underparts is not so deep chestnut, but more of an orange-cinnamon, the feathers edged with white or ashy, the latter colour prevailing on the margins of the breast-feathers; the throat is white, with scarcely any black streaks.

The females are never of such a deep rufous underneath as the males, and as the breeding-season approaches the plumage becomes greyer, and the hind-neck and mantle become mottled with black in the males. This does not seem to be the case with adult females, which have the black confined to the crown. The dark bill of the winter season becomes yellow with a black tip during the summer.

The old birds described are a pair from Alaska in the Henshaw Collection. An adult bird has been figured by Mr. Seebohm, but the figure gives no idea of the extent of the white at the end of the outer tail-feathers. [R. B. S.]

TURDUS PROPINQUUS (*Ridgw*).

WESTERN RED-BREASTED THRUSH.

Turdus migratorius, auct. (nec L.: ex Amer. Boreali occidentali et Mexico).
Turdus propinquus, Ridgway, Bull. Nutt. Orn. Club, ii. p. 9 (1877).
Turdus migratorius, a. *propinquus*, Belding, Proc. U.S. Nat. Mus. i. p. 395 (1879).
Turdus migratorius, var. *propinquus*, Belding, loc. cit.
Merula migratoria propinqua, Ridgw. Proc. U.S. Nat. Mus. iii. p. 166 (1880).

T. similis *T. migratorio*, sed rectrice extimâ vix vel minimè albo terminatâ.

This is a tolerably well-marked race of the American Robin, and, as a rule, can be easily distinguished by the entire absence of any white spot at the end of the outer tail-feather. Occasionally specimens are procured which have the outer tail-feather slightly fringed with white to a greater or less extent, but never approaching the well-marked white tip of true *T. migratorius*. That this indication of a white fringe is due in many cases to hybridization between the eastern and western races, I have no doubt, as the two forms meet together in some of their winter-haunts, and doubtless often pair and return thus to their northern breeding-places. A typical eastern bird and a typical western bird are perfectly recognizable, and the occasional intermediate specimens are probably the result of interbreeding. I do not find the other character given by Mr. Ridgway, viz. the absence of black mottling on the back in *T. propinquus*, to be constant. According to the time of year this black mottling is pronounced or absent in both races, being, in fact, a sign of the breeding-plumage, and it is present in many specimens of typical *T. propinquus*, though never to the same extent perhaps as in *T. migratorius*.

The range of *Turdus propinquus* is thus given by Mr. Ridgway in the second edition of his 'Manual':—"Western United States north to British Columbia, east to, and including, Rocky Mountains, south over tablelands of Mexico."

In British Columbia the Western Robin is an abundant resident, according to Mr. John Fannin, who says that "the bulk winter on Vancouver Island. Probably a few go south, but the numbers do not appear to be much less in winter than in summer" (*cf.* Belding, Occ. Papers Calif. Acad. ii. p. 256). Mr. Emanuel Cox also states that it is always to be seen near Cape Beale. Many specimens were procured by Mr. J. K. Lord during the Boundary Commission in British Columbia, where Mr. Streator found it very common everywhere and breeding (Chapm. Bull. Amer. Mus. N. H. iii. p. 105), and others collected by Mr. A. Forrer in Vancouver Island in February, March, and June, are in the Salvin-Godman Collection. Professor Ridgway also informs me that the single specimen from Sitka in the U.S. National Museum belongs to *M. propinqua*, though *M. migratoria* may occur in that Territory also.

In Washington Territory the species is resident, and Mr. Lawrence writes in his paper on the 'Birds of Gray's Harbor':—"Less common than *T. ustulatus*, but a common bird on the Harbor, the Humptulips, and Stevens' Prairie. I saw some on Axford Prairie in February in the midst of our wintriest weather" (Auk, ix. p. 47). Near Fort Walla Walla Dr. W. J. Williams informs

Mr. Belding (*l. s. c.*) that it is common in the breeding-season, and Mr. Brewster has found it in the same place in autumn and winter (Auk, vii. p. 227). Messrs. Richmond and Knowlton (Auk, xi. p. 308) state that they found the present species common in the valleys in Montana, and also noted it in some numbers in the mountains. Near Fort Keogh, in the same State, Mr. Thorne states that it breeds commonly, and he has even found it in the pine-woods during the breeding-season, fifty miles from any house (Auk, xii. p. 219).

Dr. Merriam gives the following note in his paper on the birds observed by him in South Central Idaho (N. Amer. Faun. no. 5, p. 108):—"Tolerably common in July along Snake River, near Blackfoot, in the Lost River Mountains, and on Big Lost River. In August and September a few were seen from time to time in Lemhi and Birch Creek Valleys and in the upper part of Wood River Valley, but it was nowhere common. A flock remained for several days about the head of Saw Tooth or Alturas Lake the last week of September."

Mr. A. W. Anthony says that the Robin is abundant in Washington, Co. Oregon, nearly the entire year, only leaving for a few days in the wet season (Auk, iii. p. 172). He noticed it on the 17th and 21st of January, and by the 10th of February it was common. At Beaverton the first nest was found on the 24th of April (*cf.* Belding, *l. s. c.*). Dr. Merrill says that near Fort Klamath it was rare during the winter, but began to arrive on the 7th of March, and became common in three or four days. By the 1st of May many nests contained their full complement of eggs (Auk, v. p. 365).

Mr. L. Belding, in his paper on the birds of Central California, writes as follows:—"This bird visits the valleys only in winter, when it is sometimes abundant, especially during the coldest weather. In summer it is rarely seen out of the pine-forests, though about the 1st of September, 1878, twenty-five or thirty were observed in an orchard at Murphy's (Proc. U.S. Nat. Mus. i. p. 395). The same observer gives some further notes (Occ. Papers Calif. Acad. ii. p. 256):—"Gridley, Oct. 1–3: snow on both sides of the valley above about 3000 feet. Not seen here again this winter (1884–85)."

Mr. Charles Townsend, in his account of the birds &c. of Northern California (Proc. U.S. Nat. Mus. x. p. 231), writes:—"More common in the cultivated valleys than elsewhere, but never abundant as Robins are in the long-settled sections of the Eastern States. Stragglers were met with in the foot-hills of Shasta County at all seasons of the year. The first nest was found at the United States fishery on May 21st. It was high up on the horizontal limb of a 'live oak' by the river, and contained four eggs. Specimens were obtained in the mountains along McCloud River in January, and on the timber-line of Mount Shasta in August." According to the same observer (*t. c.* p. 237), the species breeds from 300 to 6000 feet, and is found as high as 8500 feet in summer.

"Oroville, January and December, rare. Colfax and Alta, very rare in the middle of November. Summit and Donner Lake, not seen from November 13 to 17, although it was mild and scarcely any snow had fallen. It is a common summer resident in the fir-forests of California from latitude 38° northward; never breeding in orchards or about settlements in California, I believe. At Blood's, altitude 7200 feet, young did not begin to leave their nests until July 14, 1880, nearly a month later than in the following year, owing to difference in the winter's snowfall and consequent difference in the advent of summer."

"San Diego.—Common in the winter of 1883–84. It disappeared March 22, but returned on the 29th, and remained two days, while the mountains east of San Diego were covered with snow. One was seen at Campo, May 14, just previous to a rainstorm. No Robins were seen during a four days' journey south of Campo, about half of which was through pine-clad mountains, from May 9 to 13. Mr. T. E. Wadham collected it in Lower California, about ninety miles south-east of San Diego, April 22. His specimens showed no leaning toward var. *confinis* of the Cape region.

In many parts of California the present species appears to be only a winter visitant. Mr. W. E. Bryant says that in Alameda and Contra Costa Counties it is rare in some winters and in others abundant. Mr. F. Stephens records it as an irregular winter visitor to the San Bernardino Valley, and a rare summer resident in the mountains (*cf.* Belding's notes, *l. s. c.*). In Ventura County Mr. Evermann gives it as an abundant winter resident (Auk, iii. p. 186).

Dr. C. Hart Merriam, during the expedition to the San Francisco Mountain Region, says that it was "occasionally seen in the pines and along the lower part of the fir belt. A few were seen at Grand Falls on the Little Colorado the middle of August, and it was tolerably common at the Grand Cañon of the Colorado the middle of September" (N. Amer. Faun. no. 3, p. 101).

Mr. Ridgway, in his 'Report on the Exploration of the 40th Parallel,' records specimens from the West Humboldt Mountains in Nevada and the Truckee Valley, where a nest was found in a cotton-wood tree. Another nest was procured in the Toyabe Mountains on July 3, at an elevation of 7500 feet, and also on the East Humboldt Mountains on the 22nd of July, at a height of 8000 feet. Several nests were found at Parley's Park, Utah, in June and July, and in Pack's Cañon in Utah on the 3rd of the last-named month. Mr. Ridgway gives the following note:—"The Common Robin was not found at Sacramento Valley until we neared the foot-hills of the Sierra Nevada, where the first individuals of the species were noticed among the scattered pines which formed the outposts of the continuous forest of the mountains. From the Sierra Nevada eastward, however, it was continually met with in all wooded localities, the aspen groves of the higher cañons being its favorite resort during the summer, while in winter it descended to the lower valleys, and passed the season among the willows or cotton-woods and attendant shrubbery along the streams. In the vicinity of Carson City it was extremely abundant from the middle of March until the middle of April, and assembled in large flocks among the scrubby thickets of dwarf-plum bushes along the base of the Sierra. In August they were quite plentiful in the valley of the Truckee, below the 'Big Bend,' being attracted thither by the abundance of fruit of the buffalo-berry bushes (*Shepherdia argentea*), which at this time formed an important portion of their food; and later in the season they were observed feeding on service-berries (the fruit of *Amelanchier canadensis*) along the foot-hills of the eastern ranges.

"In their manners and notes we could not detect the minutest difference between the western and eastern Robins, although climatic or other geographical influences have perceptibly modified their plumage. In all respects it seems the same bird, the song and other notes being identical" (Expl. 40th Parallel, p. 391).

Dr. A. K. Fisher, in his account of the birds obtained during the Death Valley Expedition (N. Amer. Fauna, no. 7, p. 146), writes as follows:—"The Robin is a rather rare bird in the desert regions, even during migration and in winter. In Nevada several were seen at Ash Meadows in March. Mr. Palmer found it rather common from the valley up to the piñons on the west side of the Charleston Mountains in February, and Mr. Nelson saw it about the ranches in Pahrump and Vegas valleys, and in Vegas Wash, in March. Dr. Merriam saw it on Mount Magruder, June 8, and in Utah, at Mountain Meadows, May 17. In California a few were seen at Furnace Creek, Death Valley, the latter part of January, and again on April 10. Several were observed at Resting Springs, in the Amargosa Desert, the first half of February. A few Robins were seen about a spring in Johnson Cañon, in the Panamint Range, in April. Dr. Merriam saw several in the junipers in the same mountains April 16–19, and Mr. Nelson a few at the head of Willow Creek early in May, after which time none were seen. Several were seen in the Argus Range, above Maturango Spring, the first half of May. Mr. Nelson found it in the Inyo Mountains among *Pinus flexilis* and *P. aristata*, and in the White Mountains from the piñons up to 10,000 feet. In the Sierra Nevada Robins were plentiful in many places. Mr. Nelson found them common at the head of Owens River, on the east

slope, and in the Yosemite Valley, on the west slope of the Sierra, in July and August. Mr. Stephens found them common at Independence Creek, where a nest and four young were found at the edge of the creek June 18–23, at Bishop Creek, where they were feeding on a red berry locally known as buffalo berry, August 4–10, and at Menache Meadow, nearly to timber-line, May 24–26. They were common also at Big Cottonwood and Whitney Meadows; among the pines above Walker Basin, July 14; in the Sequoia National Park, among the pines and firs, and in the meadows, the first week in August; at Horse Corral Meadows, August 9–13; in King's River Cañon, August 13–16, and near Mineral King, September 9–12. In the western foot-hills of the Sierra they were seen as early as July 30 at Three Rivers, and Mr. Nelson found a few in the San Joaquin Valley, October 5–27, reported them as common about San Luis Obispo, October 28 to November 4, and he found them generally distributed along the route from San Simeon to Carpenteria and Santa Paula in November and December."

Mr. Beckham found the Robin abundant at Pueblo, Colorado, during the nesting-season (Auk, ii. p. 140); and Mr. Drew, in his paper on the vertical range of birds in Colorado, gives the following elevations for the present species:—10,000 feet in spring, 11,500 feet in summer, and 13,000 feet in autumn (Auk, ii. p. 15). Mr. Goss has recorded it from Kansas in October, when he saw a small flock (Auk, iii. p. 115).

In Arizona Mr. Mearns says that it is an abundant summer resident from the beginning of the pine-belt upwards, but does not occur below the pines in summer. It ranges high at times, but is not common above the pine-zone, though he found nests with young birds on the upper line of the pine-timber on the 1st of June (Auk, vii. p. 264). Mr. W. E. D. Scott observes:—"This form of the Robin I found to be a regular fall, winter, and early spring resident in the Catalinas (altitude 3500 to 6000 feet). They arrive here in the fall about November 1, and are soon quite common in small flocks or companies. All through the winter they are more or less common, but towards spring their numbers seem to be very considerably increased, and they are quite common until late in March, and are to be seen sparingly during the first week in April. I have frequently heard the males beginning to sing before they left this point, and on one occasion a single Robin was noted on May 5, 1885. I have observed the species in the pine-forests of the Catalinas in November, and on the San Pedro River in January. They are, though regular visitors, much more abundant some seasons than others, and were especially common during the winter of 1885–86" (Auk, v. p. 167).

Mr. Henshaw says that the present species is common in autumn in New Mexico (Auk, ii. p. 330), and Mr. Stevens observes that it winters abundantly in that State, and that a few pass the summer in the high mountains (Bull. Nutt. Orn. Club, iii. p. 92).

In Texas the two races of the Robin occur in winter, as already noticed in the account of *T. migratorius*. Mr. Lloyd says that *T. propinquus* is a rare bird in Concho County in the autumn, and a few winter in Tom Green County, but it is abundant in winter to the west of the latter (Auk, iv. p. 298). In South-eastern Texas it is said by Mr. Brown to be "irregularly abundant" (Bull. Nutt. Orn. Club, vi. p. 34).

The present species is fully represented by the series of Mexican specimens in the British Museum, and it is evidently a resident in most parts of Mexico, breeding in the mountains and receiving a large accession of numbers in the winter months. The following is a list of the localities represented by the specimens now before me:—Casa Colorada, Concepcion, March 7; Temosachio, March 15 (*W. Lloyd*: *Salvin-Godman Coll.*). Ciudad Durango, July (*A. Forrer*: *S.-G. Coll.*). Sierra of San Luis Potosi, July (*W. B. Richardson*: *S.-G. Coll.*). Sierra de Valparaiso, Zacatecas, July to Sept., 8000 feet (*W. B. R.*: *S.-G. Coll.*). Real del Monte, Hidalgo, Oct. 21 (*W. B. R.*: *S.-G. Coll.*). Rio Frio, Iztaccihuatl, Sept. 24 (*W. B. R.*: *S.-G. Coll.*). Sierra Nevada de Colima, Dec. to April (*W. B. R.*: *S.-G. Coll.*). Sierra de Bolaños, Jalisco, Feb. to March (*W. B. R.*: *S.-G. Coll.*).

Sierra Madre de Nayarit, 7000–8000 feet, June 22 to July 19 (*W. B. R.*: *S.-G. Coll.*). City of Mexico (*G. H. White*: *S.-G. & Seebohm Colls.*). Tlalpam, Jan. (*F. D. Godman*: *S.-G. Coll.*). Mexicalcingo, Tlalpam, Jan. 24 (*Ferrari-Perez*: *S.-G. Coll.*). Hacienda de Esclava, Jan. 4; Tetelco, Jan. 18; Coapa, March 18; Chimalpa, Dec. 7 (*Ferrari-Perez*: *S.-G. Coll.*). Las Vigas, Canton Jalapa, July, Aug. (*Ferrari-Perez*: *S.-G. Coll.*). Jalapa (*De Oca*: *S.-G. & Sclater Colls.*). La Parada, March (*A. Boucard*: *S.-G. Coll.*). Tonaguia, Oaxaca, Feb. (*M. Trujillo*: *S.-G. Coll.*). Coatepec, Vera Cruz, July 12 (*Ferrari-Perez*: *S.-G. Coll.*). Cofre de Perote, Vera Cruz, Nov. (*M. Trujillo*: *S.-G. Coll.*). Amecameca, Vera Cruz, April (*F. D. Godman*: *S.-G. Coll.*). Popocatepetl, 8000–12,000 feet, April (*F. D. Godman*: *S.-G. Coll.*). Omilteme, Guerrero, 8000 feet, Aug. 2 (*Mrs. H. H. Smith*: *S.-G. Coll.*). Amula, Guerrero, 6000 feet, Aug. (*Mrs. H. H. Smith*: *S.-G. Coll.*).

The young birds represented in the above series show that the species had bred at Amula, Coatepec, Las Vigas in Jalapa, near the city of Mexico, and on the Sierra Madre de Nayarit. According to Sumichrast, it is a resident species in the alpine region of the State of Vera Cruz, as he found numbers of young birds in the mountains near Orizaba in July (Mem. Bost. Soc. N. H. i. p. 543). Mr. F. M. Chapman also found it nesting plentifully at Las Vigas in Vera Cruz in April, and he says that here the nesting-season begins earlier than at Jalapa (Bull. Amer. Mus. x. p. 38). It is probably this form which was procured at Cordova by Sallé (Sclater, P. Z. S. 1856, p. 249).

The habits of the Western Robin so closely resemble those of its eastern representative that no separate account of them is necessary.

Adult male. Similar to *T. migratorius*, but distinguished by the almost obsolete white markings at the end of the outer tail-feathers, these tips being sometimes entirely absent. Total length 9 inches, culmen 0·9, wing 5·5, tail 3·8, tarsus 1·4.

Adult female. Similar to the male, but not so richly coloured. Total length 9·5 inches, culmen 0·95, wing 5·4, tail 3·9, tarsus 1·3.

Winter plumage. Similar to that of *T. migratorius*: "bill brownish black, more yellowish brown along the commissure and on the lower mandible; tarsi and toes brownish black; iris brown" (*R. Ridgway*).

The specimens described are a male from Vancouver Island and a female from Ballina, in the Salvin-Godman Collection. The right-hand figure on the first Plate is an adult bird in winter plumage from the city of Mexico, and in the second Plate Mr. Seebohm has figured a young male from Toronto, but without indicating the white tips to the outer tail-feathers, and the hinder figure represents a young female from California in his Collection. [R. B. S.]

TURDUS RUFIVENTER, *Vieill.*

RUFOUS-BELLIED THRUSH.

Zorzal obscuro y roxo, Azara, Apunt. i. p. 336 (1802); Hartl. Ind. Azara, p. 6 (1845); Berl. J. f. O. 1887, p. 113.
Turdus rufiventris, Vieill. N. Dict. d'Hist. Nat. xx. p. 226 (1818).
Turdus chochi, Vieill. N. Dict. d'Hist. Nat. xx. p. 226 (1818).
Turdus rufiventer, Spix, Av. Bras. i. p. 70, pl. lxxiii. (1824); Seebohm, Cat. Birds Brit. Mus. v. p. 222 (1881).

T. gutture striato: pedibus fuscis, minimè flavis: pectore griseo: abdomine aurantiaco-rufo.

The present species is, according to Mr. Hudson, common everywhere in the La Plata region, and does not seem to be migratory (Argent. Orn. i. p. 3). Durnford states that it is resident near Buenos Ayres, but is never seen in large parties like *T. leucomelas*, and he found it common near Baradero in April (Ibis, 1877, p. 167). Darwin met with it at Maldonado (Voy. 'Beagle,' ii. p. 59), and Mr. Hudson at Conchitas (Scl. & Salv. P. Z. S. 1868, p. 138). According to Darwin (*l. c.*) it occurs on the Rio Negro in Patagonia, which is its southern limit. Mr. E. W. White obtained specimens at Cosquin in the province of Cordova, and at Oran in Salta. He says:—"During my sojourn in Oran I did not meet with many of this species, but in the dense woods of Misiones they were abundant" (P. Z. S. 1883, p. 592). Near Lomas de Zamora, Mr. F. Withington describes the species as being very rare. He writes:—"I have only seen two examples altogether. One of them I shot in a small wood, whence it attracted me by its sweet song. It was very tame, and showed none of that skulking shyness which I noticed in this species in Banda Oriental" (Ibis, 1888, p. 462).

In Uruguay Mr. Barrows says that this species is called the "Zorzal vientre colorado (Red-bellied Thrush)." He found it less abundant and more retiring than *T. leucomelas*, and it was seldom seen except in the woods: it was resident throughout the year at Concepcion (Bull. Nutt. Orn. Club, viii. p. 85). Mr. O. V. Aplin observes:—"I found this fine Thrush common in the monte of the Rio Negro in Uruguay in December. They were usually to be heard singing in the thick growth of mataojo on the river-bank and concealed from view on the land side. At other times they conceal themselves in thicker parts. I noticed one feeding on berries of the moyé. The song of this bird is to my mind by far the sweetest of any I have heard in South America. It is delivered after the fashion of our Song-Thrush, the notes being less varied than those of that bird, while some of them are even sweeter and richer. I syllabled one to sing '*deur, deur, deur, sweet, sweet, ut-ich, ut-ich.*' It was not until March that I met with it in the valley of the Arroyo Grande, where I found one haunting a thicket (close to water) of guayaba and ñangapirí. I was attracted by the unmistakable low alarm-note of a Thrush, but the bird was so shy that I could not get a shot at it. A few days after I returned to the spot and secured it—a male, its stomach full of tala berries. The bird is known as the 'Zorzal,' and an Englishman who had been in many parts of the South American continent told me that it was everywhere celebrated for its song."

The species was first described from Paraguay by Azara, and recently Dr. Borelli has obtained it in the same country, at Paraguari in Central Paraguay in August, and again at Concepcion in the highlands in October (Salvadori, Boll. Mus. Torino, x. p. 2). According to Mr. Graham Kerr it is abundant on the Pilcomayo (Ibis, 1892, p. 122).

It is a frequent species in collections from Rio, and Mr. Euler says that it is the commonest of the Thrushes at Cantagallo in that Province (J. f. O. 1867, p. 403). Mr. Konigswald records it from San Paulo (J. f. O. 1896, p. 345), and specimens obtained by Mr. Joyner at Pelotas in Rio Grande do Sul are in the Salvin-Godman Collection. Natterer's localities for this Thrush are as follows:—Rio de Janeiro, December; Sapitiba, March; Registo do Sai, April; Mattodentro, December; Ypanema, April, June, July, August; Curytiba, October; Villa de Castro, December; Goiaz, September; Cuyaba, January.

Specimens from Bahia and Pernambuco are in the British Museum. Compared with the series from Rio, the Bahia skins show slight variations. Both summer and winter plumages of the two forms are before me, and there is certainly as much difference between them as in some of the African species which are universally recognized by naturalists at the present day; but I find that in summer plumage it is impossible to distinguish the two birds, though in winter dress the southern birds are much deeper olive in colour. Count Von Berlepsch, however, writes to me that the series in his collection does not confirm my conclusions.

Prince Maximilian of Neuwied observes:—"I found this Thrush of fairly common occurrence, and especially abundant near Espirito Santo. It frequents not only the large woods, but also straggling bushes. No song worth mention has ever been noticed. Its nest is built in a thick shrub and placed in a fork of a branch, or upon the thick portion of the branch itself. It exactly resembles the nest of our Blackbird (*T. merula*); it is made of small roots of some plant, is fairly large, and interwoven with dried rootlets and small delicate twigs trodden down. A nest with three somewhat elongated blunt-pointed eggs, of a beautiful green colour flecked with liver-brown, was found in December."

Mr. W. A. Forbes procured specimens in Pernambuco, and writes as follows:—"I found this Thrush common all over the districts I visited, except in the immediate neighbourhood of Recife. In its habits it much resembles the Common Thrush (*T. musicus*) of England, spending a good deal of its time on the ground in pursuit of its food. It is usually to be seen in paths in the lower second growth, or in the clearings for railways, on the line itself, and is not found in the thick forests. The Brazilians call this Thrush 'Sabiá,' as well as *T. fumigatus*, and esteem it highly for eating-purposes. Probably on this account it has become rare near Recife, and shy elsewhere in the neighbourhood of towns" (Ibis, 1881, p. 327).

There is a specimen from Bolivia, from the Eyton Collection, in the British Museum.

Mr. W. H. Hudson writes:—"The Red-bellied Thrush is a noisy, strong-winged, quarrelsome bird, closely resembling the Dusky Thrush in its manners. It inhabits forests, runs on the ground in search of food, and, when approached, darts away with loud chuckling notes, flying close to the ground. These birds are often seen pursuing each other through the trees with loud harsh screams. The song has a faint resemblance to that of the English Song-Thrush, being composed of a variety of notes uttered in the same disconnected manner, with frequent pauses; but it is, both in sweetness and strength, inferior to that of the English bird. As a rule this Thrush sings concealed in a thick bush or tree. The nest is deep, well made, plastered inside with mud, and concealed in the centre of a large bush or low tree. The eggs are four, pale blue in colour, and thickly spotted with brown."

"On the Pilcomayo," says Mr. Graham Kerr, "it frequents the open woods and bush. Its favourite feeding-grounds are the open spaces near the river, which are liable to occasional flooding

from it. On one occasion I observed this species fishing in a shallow pool, pursuing the small fishes and shrimps by hopping after them from one end of the pool to the other."

Mr. Euler says that at Cantagallo the species nests in bushes, hedges, and fruit-trees in gardens, and it especially affects the more densely clothed orange-trees, placing its nest at a height of from five to ten feet from the ground. He has also found the nest in the upper branches of a high "manga" tree, quite forty feet up, and again on a tree-stump only two feet high, but always resting on a solid foundation; it is placed either by itself in the fork of a branch or touching the stem, but is always concealed by the foliage. The nest is a deep cup like that of other Thrushes. The eggs are of a beautiful yellowish-green, with longitudinal zigzag spots distributed over the surface.

Adult. General colour above olive-brown with an ashy tinge, the rump and upper tail-coverts more distinctly ashy; wing-coverts like the back; bastard-wing, primary-coverts, and quills dark sepia-brown, edged with ashy, more broadly on the secondaries; tail-feathers brown, shaded with ashy on their margins; head and neck like the back; lores ashy whitish; cheeks and ear-coverts ashy-brown, the latter with whitish hair-like shaft-lines; chin and throat white, with narrow streaks of dusky brown, the fore-neck pervaded with ashy; remainder of under surface from the chest downwards rich chestnut, including the under tail-coverts, the smallest of which have ashy-olive margins; thighs ashy, washed with rufous; under wing-coverts and axillaries chestnut like the breast; quills dusky brown, rufous along the inner webs: "bill yellowish horn-colour; feet pale brown; eyelids orange; inside of mouth ochre" (*O. V. Aplin*). Total length 9 inches, culmen 0·95, wing 4·6, tail 3·7, tarsus 1·35.

Adult female. Similar to the male in colour: "bill yellow; feet greenish; iris yellow" (*Alan Peel*). Total length 9 inches, culmen 1·0, wing 4·9, tail 3·8, tarsus 1·4.

In winter plumage the adult birds are much more olive and not so grey as in summer, the throat is dull white, obscurely streaked with dusky brown, and the fore-neck and breast are overshaded with brown in contrast to the rufous of the abdomen.

The specimens figured are a Bahia specimen and one from Misiones in the Seebohm Collection. I have described examples from Rio de Janeiro and from Uruguay. [R. B. S.]

TURDUS MAGELLANICUS, *King*.

MAGELLAN THRUSH.

Turdus magellanicus, King, P. Z. S. 1830, p. 14.
Turdus falklandiæ, D'Orb. Voy. Amér. Mérid., Ois. p. 202 (c. 1840).
Turdus falklandicus, part. (nec Q. & G.), Gould in Darwin's Voy. 'Beagle,' ii. p. 59 (1841); Seebohm, Cat. Birds Brit. Mus. v. p. 223, pl. xiv. (1881).
Merula falklandica (nec Q. & G.), Cass. U.S. Expl. Exped., Mamm. & Orn. p. 157 (1858).
Turdus falklandicus (nec Q. & G.), Scl. & Salv. P. Z. S. 1878, p. 431.

T. gutture striato: pedibus flavis: pileo nigro, haud dorso concolore: suprà olivascenti-griseus, vel olivascenti-brunneus (*hiem.*): subtùs pallidè ochraceus.

The present species appears to be a very common bird in Chili, especially in the vicinity of Santiago, whence many specimens obtained by Dr. Landbeck and Mr. E. C. Read are in the Berkeley-James and Salvin-Godman Collections. It evidently breeds in that province, as young birds are represented in the series. Mr. A. A. Lane has also obtained both young and old birds at the Hacienda Mansel, near Hospital in Santiago, as well as at Coronel near Concepcion (*cf.* Ibis, 1897, pp. 9, 12).

Darwin records the species from the island of Chiloe (Voy. 'Beagle,' ii. p. 59), and it is probably found everywhere down to the Straits of Magellan and Tierra del Fuego, where again it was noticed by Darwin (*l. c.*). Peale also records his finding fully-grown young birds at Orange Bay in the last-named island in February (Cass. U.S. Expl. Exped., Orn. p. 157). The Antarctic Expedition met with the species on Hermit Island, where Dr. McCormick obtained specimens.

This Thrush has been noticed in many places in the Straits of Magellan. During the voyage of H.M.S. 'Challenger,' Sir John Murray procured examples at Port Currucha in January, and at Gray's Harbour in Messier Channel (Scl. & Salv. P. Z. S. 1878, p. 431). During the voyage of H.M.S. 'Alert,' Dr. Coppinger met with it at Sandy Point and Isthmus Bay in January, and at Tom Bay in February, as well as at Cockle Cove in October (Sharpe, P. Z. S. 1881, p. 7). The U.S. Fish Commission Ship 'Albatros' has also procured it at Laredo, Port Otway, and Port Currucha (Ridgway, Proc. U.S. Nat. Mus. xii. p. 131).

The species likewise occurs on the Juan Fernandez Islands, specimens having been brought thence by Sir John Murray during the Voyage of H.M.S. 'Challenger' (P. Z. S. 1878, p. 431).

It is apparently found throughout Patagonia up to the Rio Negro. Mr. Henry Durnford shot a specimen in the valley of the Sengel, in Central Patagonia, on the 16th of November. It was the only one he saw and was in company with *Myiotheretes rufiventris* (Ibis, 1878, p. 392). Mr. W. H. Hudson writes:—"This Thrush, which I met with on the Rio Negro of Patagonia, so closely approximates to *T. rufiventris* in colour, language, and habits, that the casual observer finds it difficult to distinguish one from the other. Its nest and eggs are also precisely like those of its northern representative. The song is, however, much poorer, and reminds one of the first attempts of a young bird. That a member of so melodious a family should have so inferior a song I attribute to the fact that Thrushes (unlike the songsters of other genera) sing only in the warm season and

when the air is calm. In the southern portion of the South-American continent violent winds prevail in summer, so that this southern Thrush sings perhaps less frequently than any other song-bird, and appears to be losing the faculty of song altogether."

Adult male. General colour above olive-brown with a tinge of ashy, becoming clearer ashy-grey on the lower back, rump, and upper tail-coverts; wing-coverts like the back; bastard-wing, primary-coverts, and quills black, the latter fringed with ashy-grey, and the secondaries broadly edged with the same colour; tail-feathers black, washed externally with slaty-grey; crown of head black, the base of the forehead washed with brown; lores, ear-coverts, and sides of face black; cheeks fulvescent, streaked with black; throat dull white, streaked with black; fore-neck and breast pale ashy as well as the sides of the body; the centre of the breast and abdomen light ochreous-buff; under tail-coverts white, broadly margined with ashy-grey, the long ones ashy-grey, centred with white; thighs ochreous-buff; under wing-coverts and axillaries light ochreous-buff with ashy bases; quills dusky below, ashy along the inner web: "bill and feet pale orange-yellow; iris wood-brown" (*H. Durnford*). Total length 10 inches, culmen 1·0, wing 5·3, tail 4·0, tarsus 1·45.

Adult female. Similar to the male, but more dingy in colour, and the black cap not so strongly pronounced. Total length 10 inches, culmen 0·95, wing 4·7, tail 3·6, tarsus 1·4.

In winter plumage the back is russet-brown, shading into slaty-grey on the lower back, rump, and upper tail-coverts; the black cap is in strong contrast to the brown of the neck. The underparts from the lower throat downwards are ochreous-rufous, slightly browner on the chest, and the under tail-coverts are slaty-grey, with broad white centres and white tips. A specimen obtained in October is in full moult, and the chest is changing from the grey plumage to the brown of the winter dress.

The adult pair of birds described are from Calle Calle and Mansel in the Berkeley-James Collection, and the winter plumage is described from a specimen in the Seebohm Collection from the Straits of Magellan. [R. B. S.]

TURDUS FALKLANDICUS, *Q. & G.*

FALKLAND-ISLAND THRUSH.

Turdus falcklandii, Quoy et Gaim. Voy. de l'Uranie, p. 104 (1824).
Turdus falklandicus, Gould in Darwin's Voy. 'Beagle,' ii. p. 59 (1841); Seebohm, Cat. Birds Brit. Mus. v. p. 224, pl. xiii. (1881).
Turdus magellanicus, part. (nec King), Bp. Consp. i. p. 272 (1850).
Turdus maluinarum, Licht. MSS.; Bp. Consp. i. p. 272 (1850).

T. similis *T. magellanico*, sed ubique saturatior, uropygio et supracaudalibus dorso concoloribus, minimè cineraceis, distinguendus.

This is a dark insular form of *T. magellanicus*, from which it differs in its much darker coloration, the head being brown like the back in winter plumage, but black in summer. It can always be recognized from *T. magellanicus* by its brown lower back and rump. Seebohm believed that it never had a black head like *T. magellanicus*; but this is a mistake, as the head is black in the full plumage. The brown, instead of grey, colour of the lower back, rump, and upper tail-coverts is a never-failing distinction, as Seebohm has pointed out in his 'Key' to the genus *Turdus* (Cat. Birds Brit. Mus. v. p. 187).

The species appears to be confined to the Falkland Islands, where, says Darwin, "it chiefly inhabits the more rocky and dryer hills. It haunts also the neighbourhood of the settlement, and may very frequently be seen within old sheds. In this respect, and generally in its habits, it resembles the English Thrush (*T. musicus*); its cry, however, is different. It is tame, silent, and inquisitive" (Voy. 'Beagle,' ii. p. 59).

The measurements of an adult bird are as follows:—Total length 11 inches, culmen 1·15, wing 5·7, tail 4·2, tarsus 1·65.

The description and the figure in the Plate are taken from examples in the British Museum.

[R. B. S.]

TURDUS FLAVIROSTRIS (*Swains.*).

MAZATLAN THRUSH.

Merula flavirostris, Swains. Phil. Mag. i. p. 369 (1827).
Turdus rufopalliatus, Lafr. Rev. Zool. 1840, p. 259.
Turdus flavirostris, Gray, Gen. B. i. p. 220 (1847); Salvin & Godman, Biol. Centr.-Amer., Aves, i. p. 21, pl. iii. fig. 1 (1879 : pt.); Seebohm, Cat. Birds Brit. Mus. v. p. 225 (1881 : pt.).
Turdus palliatus, Bp. Consp. i. p. 272 (1850).

T. gutture nigro striato : pedibus flavis : rostro flavo : dorso cinnamomeo.

This very distinct species is an inhabitant of Western Mexico from Sonora to Tehuantepec. It was originally described by Swainson from a specimen supposed to have been obtained by Bullock on the tablelands of Mexico, but, as Messrs. Salvin and Godman point out (Biol. Centr.-Amer., Aves, i. p. 21), this was probably a mistake.

Mr. W. Lloyd has obtained specimens in the Sierra de Alamos in Sonora, at an altitude of 3000 feet, in May, and these are in the Salvin-Godman Collection. Grayson has recorded the species from Mazatlan, and the Salvin-Godman Collection contains specimens procured there by Mr. A. Forrer in December. In the Seebohm Collection there are also many examples of *T. flavirostris* obtained by Mr. Forrer at Presidio in Mazatlan in January and again in June. Mr. Lloyd has met with the species at Zapotlan, in Jalisco, in June (*Mus. Salvin-Godman*), and Mr. W. B. Richardson has sent specimens from San Blas (May) and the Sierra de Nayarit (June) in Tepic (*Mus. Salvin-Godman*).

Xantus and Grayson found the species on the plains of Colima many years ago (*cf.* Lawrence, Mem. Bost. Soc. N. H. ii. p. 266), and Messrs. Salvin and Godman have more recently received specimens from Mr. Richardson, obtained in the same locality in January, while Mr. Lloyd has procured it at Santiago, in Colima, in June. Admiral Markham met with the species near Acapulco (*Mus. Salvin-Godman*), and Mrs. Herbert Smith has procured a young bird at Dos Arroyos, in Guerrero, in October (*Mus. Salvin-Godman*). M. Rébouch obtained specimens at San Juan del Rio (Scl. & Salv. P. Z. S. 1870, p. 550), and in Tehuantepec it has been procured by Xantus, Grayson, and Sumichrast (Lawr. Bull. U.S. Nat. Mus. no. 4, p. 11). Ferrari-Perez has also recorded specimens, one of which is now in the Salvin-Godman Collection, from Chietla, in the Canton de Chiantla, Puebla, where they were obtained in November and December (Proc. U.S. Nat. Mus. ix. p. 132).

Grayson describes this species as an inhabitant of woods and gregarious in its habits, and he says that, in its migrations, it passes from one part of the country to another in quest of the different kinds of berries which are its chief subsistence.

Adult male. General colour above dark cinnamon-rufous, brighter and more chestnut on the lesser and median wing-coverts, the greater series slaty-grey, externally washed with cinnamon; bastard-wing, primary-coverts, and quills sepia-brown, externally clear slaty-grey, somewhat hoary on the primaries, the inner secondaries narrowly edged with cinnamon; lower back and rump pale slaty-grey, with a slight wash of cinnamon; upper tail-coverts darker slaty-grey; tail-feathers black, externally washed with dark slate-colour; crown of head and hind-neck slaty-grey, but the former

washed with ochreous-brown, especially on the forehead; lores blackish; sides of face slaty-black, with hair-like whitish shaft-lines; sides of neck slaty-grey; cheeks and throat white, streaked with triangular rows of black spots as far as the fore-neck, which is slightly washed with ashy-brown; under surface of body deep cinnamon-rufous, brighter on the flanks and slightly overshaded with brown on the chest; centre of abdomen and under tail-coverts pure white, the latter with concealed slaty-grey bases; thighs slaty-grey, edged with white; sides of lower flanks slaty-grey; under wing-coverts and axillaries bright cinnamon-rufous; quills ashy below, pale rufous along the inner web. Total length 9·5 inches, culmen 0·85, wing 5·3, tail 3·9, tarsus 1·2.

Adult female. Similar to the male, but paler and with the mantle more olivaceous and the wing-coverts not so rufous; the under surface of the body much lighter and more of a rufous-brown, with very little tinge of cinnamon. Total length 9 inches, culmen 0·9, wing 4·85, tail 3·75, tarsus 1·3.

The specimens figured in the Plate are a male and female from Presidio in the Seebohm Collection. I have described the adult male and female from Mexican specimens in the same Collection. [R. B. S.]

TURDUS GRAYSONI, *Ridgway*.

GRAYSON'S THRUSH.

Turdus flavirostris (nec Swains.), Lawr. Proc. Bost. Soc. 1871, p. 276; id. Nat. Hist. Tres Marias & Socorro, p. 17 (1871); id. Mem. Bost. Soc. ii. pt. 3, no. 2, p. 266 (1874).
Merula flavirostris graysoni, Ridgw. Proc. U.S. Nat. Mus. v. p. 12 (1882).
Merula graysoni, Ridgw. Man. N. Amer. B. 2nd ed. p. 578 (1896).

T. similis *T. flavirostri*, sed præpectore cineraceo, hypochondriis rufescenti-brunneis, interscapulio olivascenti-brunneo, distinguendus.

This is quite a distinct species from *T. flavirostris*, and represents that bird in the Tres Marias Islands, off Western Mexico. Mr. Ridgway gives its characters as the dull greyish-fulvous flanks, the light raw-umber-brown colour of the wing-coverts and scapulars, and the more greyish colour of the back, the hind-neck being also scarcely different from the latter.

Grayson says that it is found on the Tres Marias in great numbers, and breeds there.

Adult male. Distinguished from the male of *T. flavirostris* by its ashy-grey chest, rufous-brown sides, and pale orange-rufous axillaries and under wing-coverts; the mantle is also olivaceous-brown, more like that of the female of *T. flavirostris*. Total length 9 inches, culmen 0·95, wing 5·2, tail 3·9, tarsus 1·3.

Adult female. Similar to the male. Total length 8·5 inches, culmen 1·0, wing 5·15, tail 4·0, tarsus 1·45.

The descriptions are taken from a pair obtained in the Tres Marias Islands by Mr. A. Forrer, the male being in the Salvin-Godman Collection and the female in the Seebohm Collection. The specimens figured are in the Seebohm Collection. [R. B. S.]

TURDUS CHIGUANCO, *Lafr. & d'Orb.*

D'ORBIGNY'S THRUSH.

Turdus chiguanco, Lafr. & d'Orb. Syn. Av. Mag. de Zool. 1837, p. 16; d'Orb. Voy. Amér. Mérid. p. 201, pl. ix. fig. 2 (1837); Seebohm, Cat. Birds Brit. Mus. v. p. 225 (1881).

T. gutture indistinctè nigro striato: pedibus flavis: pileo dorso concolore: subcaudalibus latè albo medialiter striatis.

This dull-coloured Thrush is found from Ecuador to Peru and Bolivia, and extends also to the Chilian province of Tarapacá.

Specimens from Cuenca and Riobamba in Ecuador, procured by Fraser, are in the Sclater Collection. Fraser also obtained other examples at Gualaquiza and Zamora (Sclater, P. Z. S. 1868, p. 450). On the plateau of Riobamba he found it a common bird but very shy (Sclater, P. Z. S. 1858, p. 550).

In Peru the species has been met with by Henry Whitely at Islay in May and September, in the Catarindo Valley in September, and at Arequipa in May and June (Scl. & Salv. P. Z. S 1867, p. 984; 1868, p. 569). Mr. Jelski met with the species at Maraynioc and Huanta (Tacz. Orn. Pérou, i. p. 494). Mr. Baron has procured specimens at Cajamarca, at an elevation of 9000–9500 feet.

In the vicinity of Lima, Prof. Nation says that this Thrush is migratory, arriving in June and leaving in October. It resorts to the valleys in the neighbourhood of that city (Sclater, P. Z. S. 1866, p. 96).

A specimen from Bolivia, procured at Tilotilo by Buckley (Scl. & Salv. P. Z. S. 1879, p. 591), is in the Salvin-Godman Collection, and a female bird obtained by Herr Rahmer at Sibaya in Tarapacá, in January, is in the collection bequeathed to the British Museum by Mr. Berkeley James (Sclater, P. Z. S. 1886, p. 396).

D'Orbigny's note on this species is as follows:—"We met with this Thrush on the western slope of the Peruvian Andes, from the sea-level up to 2000 metres, that is to the suburbs of the town of Tacna, and thence, ascending the Cordillera, to the village of Pacna. In all these localities it is very common at the bottom of the ravines, and at all places where bushes or fruit-trees are encountered, as well as the brushwood which it never leaves. It is often seen in couples, or by itself, in inhabited districts, where it disports itself fearlessly and with abundant familiarity, as if it felt quite at home. It scratches frequently on the ground, turning over the dead leaves, and always perches on the low branches of the bushes. It runs with great quickness, frequently elevating its tail. In a word, in its ways and in its flight, one cannot do better than compare it with our European Thrushes.

"It is a resident bird, feeding on grain and insects. We should have liked to eat it, but its flesh is not only hard but disagreeable, and the natives will have none of it. We have been told that its song is full of harmony in the breeding-season, so that it is often brought up in a cage and is not difficult to rear. The Aymara Indians call it 'Chiguanco,' which has suggested to us the specific name."

Fraser says that in Ecuador he found this Thrush a "smart, active, upright bird, seen in pairs about the meadow-lands." At Riobamba it was "common, but very shy, found on the ground in swampy places. The stomach of one bird contained maggots, insects, and a small tadpole."

Adult male. General colour above uniform ashy-grey, slightly shaded with olive, the wing-coverts and quills sepia-brown, externally ashy like the back, the secondaries broadly margined with ashy; tail-feathers dark sepia-brown, externally ashy; lores ashy-fulvous; in front of the eye a dusky spot; feathers below the eye and ear-coverts ashy-grey, with hair-like shaft-lines of whitish; cheeks dull white, spotted with dusky black; chin white; remainder of under surface duller ashy-grey, with a slight olive tinge, especially on the flanks and sides of the body; the throat obscurely streaked with triangular spots of dusky blackish; under tail-coverts slaty-grey, with white fringes and narrow white shaft-streaks; under wing-coverts and axillaries ochreous-buff, with ashy-grey bases; quills dusky below, light ashy on the inner webs. Total length 10 inches, culmen 1·05, wing 5·25, tail 4·2, tarsus 1·5.

The male described was procured by Mr. O. T. Baron at Cajamarca in July. A female from Islay obtained by Whitely on the 10th of May seems to be still in winter plumage. It is olive-brown above and below, only the abdomen being whitish. The stripes on the throat are very indistinct, and there is no orange-buff on the axillaries, which are ashy-brown like the breast: "bill bright yellow; feet, toes, and claws bright yellow; iris reddish hazel" (*H. Whitely*). Total length 10 inches, culmen 1·0, wing 5·15, tail 3·8, tarsus 1·4.

The specimen figured is from Islay, and is in the Seebohm Collection. [R. B. S.]

TURDUS TEPHRONOTUS, *Cab.*

AFRICAN BARE-EYED THRUSH.

Turdus tephronotus, Cab. J. f. O. 1878, pp. 205, 218, Taf. iii. fig. 2; Seebohm, Cat. Birds Brit. Mus. v. p. 226 (1881); Reichen. Vög. deutsch. Ost-Afr. p. 233, fig. 103 (1894).
Peliocichla tephronota, Cab. J. f. O. 1882, p. 320.

T. rostro et pedibus flavis: notæo pallidè schistaceo: gutture albo, nigro striolato: gutture et præpectore schistaceis: pectore et hypochondriis lætè aurantiaco-rufis, abdomine medio albo: plagâ postoculari nudâ flavâ.

This delicately-coloured Thrush is distinguished from all its African allies by the conspicuous bare patch of yellow skin which surrounds the eye. It is apparently restricted to a limited area in East Africa, and does not enjoy the wide range of some of the allied species.

It was originally described by Dr. Cabanis from specimens brought by Hildebrandt from the Tira River and N'di in the Teita country (J. f. O. 1878, p. 205), and Dr. Reichenow also records it as an inhabitant of the Taveta district (Vög. deutsch. Ost-Afr. p. 233). Mr. F. J. Jackson procured two specimens near Witu in June (Ibis, 1898, p. 139), and Fischer met with the species at Kipini in July (J. f. O. 1879, p. 279) and at Barawa (J. f. O. 1885, p. 141), as well as between Formosa Bay and Lamu (J. f. O. 1878, p. 277). From the latter place Sir John Kirk has also forwarded examples (Shelley, P. Z. S. 1881, p. 574). Fischer met with it at Kunumbu (J. f. O. 1878, p. 277), and Mr. Jackson has also procured the species at Tangani near Lamu (Shelley, Ibis, 1888, p. 299). It occurs also in Ugogo (Reichen. Vög. deutsch. Ost-Afr. p. 233), where Emin Pasha procured a specimen in July at Matangesi. Mr. H. C. V. Hunter has also met with it on the Useri River in the Kilimanjaro district in July (Shelley, P. Z. S. 1889, p. 363).

Mr. Jackson says that in habits and song this Thrush is exactly like our English Blackbird (*Merula merula*). The late Dr. Fischer remarks that he found it on the way from Formosa Bay to Lamu in thorny bushes, and noticed that it kept up a vibrating motion of the tail. Hildebrandt states that it was rare in Teita, being found in the thinly wooded parts of the country.

Adult male. General colour above clear bluish-grey, the wing-coverts like the back; bastard-wing, primary-coverts, quills, and tail-feathers dark sepia-brown, externally like the back, the edges of the primaries hoary-grey; crown of head like the back, with a faintly indicated line of white above the eye; lores and space round the eye bare and yellow; ear-coverts a little darker grey than the crown; cheeks white, separated from the sides of the face by a line of black spots, the malar line of spots being also very distinct; throat white, distinctly streaked with rows of black spots; sides of neck, fore-neck, and chest clear bluish-grey, forming a broad chest-band; breast and abdomen bright orange-rufous, a little paler on the thighs and centre of the breast, the lower abdomen becoming gradually whiter; under tail-coverts pale buff, with ashy-brown margins, the longer coverts for the most part ashy-brown, with the tip and a wedge-shaped centre to the feathers pale buff; under wing-coverts and axillaries deep orange-rufous; quills dark brown below, rufescent along the inner webs: bill "orange" (*Jackson*; *Fischer*), "bright orange-red" (*Emin*); feet

"dusky flesh-colour" (*Hildebrandt*), "orange" (*Fischer*; *Jackson*), "orange-yellow" (*Emin*); iris "umber-brown" (*Emin*), "greyish-brown" (*Fischer*), "grey" (*Hildebrandt*); bare space round the eye "orange" (*Fischer*), "yellow" (*Emin*), "dull yellow" (*Jackson*). Total length 7·5 inches, culmen 0·9, wing 4·2, tail 3·0, tarsus 1·2.

Adult female. Similar to the male, but a little paler orange underneath, and with a slight wash of orange-buff overspreading the grey chest-band. Total length 8·0 inches, culmen 0·9, wing 4·2, tail 3·2, tarsus 1·15.

Dr. Fischer found the species in full moult on the 17th of July.

The specimen figured is in the Shelley Collection, and the descriptions are taken from a pair in the British Museum. [R. B. S.]

TURDUS OLIVACEUS, *Linn.*

CAPE THRUSH.

Le Merle olive du Cap de Bonne Espérance, Briss. Orn. ii. p. 294, pl. xxii. fig. 3 (1760).
Turdus olivaceus, Linn. Syst. Nat. i. p. 292 (1766); Sharpe, ed. Layard's B. S. Afr. p. 201 (1876); Seebohm, Cat. Birds Brit. Mus. v. p. 227 (1881)
Olive Thrush, Latham, Gen. Syn. ii. pt. 1, p. 66 (1783).
Peliocichla olivacea, Cab. J. f. O. 1882, p. 319.
Cichloides olivaceus, Ridgw. Proc. U.S. Nat. Mus. iv. p. 322 (1882).
Psophocichla olivacea, Heine & Reichen. Nomencl. Mus. Hein. p. 5 (1882).
Turdus olivacinus, var. *olivaceus*, Seebohm, Ibis, 1883, p. 166.

T. gutture albo, nigro striato: pedibus flavis: notæo concolore, olivascenti-schistaceo: subcaudalibus fuscis, medialiter albo striatis: abdomine et hypochondriis aurantiaco-rufis.

This species, which has been called the "Olive" or "Olivaceous" Thrush, is not particularly olive in colour, and the English name has been badly chosen. I propose, therefore, to call it the Cape Thrush, as it is a well-known inhabitant of the Cape Colony. It extends from Cape Town to the eastern districts and thence northward to Natal and the Eastern Transvaal.

Specimens from the vicinity of Cape Town, obtained by Mr. E. L. Layard, are in the British Museum. He says that it may be found at certain seasons of the year in great abundance in orchards around Rondebosch, "when fruit is ripe, and apples and pears fall off the trees and rot on the ground" (Sharpe, ed. Layard, B. S. Afr. p. 200). Dr. Bradshaw found it to be abundant along the Orange River (Sharpe, *op. cit.* p. 313). Andersson obtained both old and young birds at the Knysna (*spec. in Mus. Brit.*). Mr. Rickard found the species near East London and Port Elizabeth, and Mr. T. C. Atmore procured it near Eland's Post in the eastern districts of the Cape Colony (Sharpe, *tom. cit.* p. 201), while Major Trevelyan has sent a specimen from the neighbourhood of Kingwilliamstown to the British Museum (Sharpe, *t. c.* p. 813). Mr. Moffat forwarded the species to Mr. Layard from Kuruman (Sharpe, *t. c.* p. 813). Mr. T. Ayres writes that, in Natal, "these Thrushes appear to be more numerous during the winter than the summer months. They frequent the bush-range along the coast, and are tolerably plentiful" (Gurney, Ibis, 1868, p. 45). Specimens from Durban and Pinetown (*T. L. Ayres*) are in the British Museum, as also others collected by Colonel E. A. Butler and Capt. Savile Reid on the Drakensberg Mountains near Newcastle in August and September, and Capt. Reid also shot a specimen close to the beach at Port Natal.

Messrs. R. B. and J. D. S. Woodward obtained it on the Ifafa River. The same naturalists procured adult and young specimens at Eschowe in Zululand, showing that the species nests there (Sharpe, Ibis, 1897, p. 502). Although Mr. F. A. Barratt states that he never observed this Thrush in the Orange Free State (Ibis, 1876, p. 201), it undoubtedly does occur there, as Mr. Symonds has met with it near Kroonstad (Ibis, 1887, p. 230). Its range also extends to the Eastern Transvaal, where, Mr. Barratt says, "it is pretty plentiful in the bush at Macamac" (Ibis, 1876, p. 201). Mr. T. Ayres has also found it inhabiting the dense forest in the Lydenburg district (Ibis, 1876, p. 426).

The present species appears to have little or no song. Mr. Thomas Ayres says that it "seldom utters a note, and might well be called the Silent Thrush"; and Mr. Layard writes:—"It utters no song, but only a short hurried cry when alarmed, and flies upward to the topmost branches of the thickest trees, amidst which it endeavours to conceal itself. If unsuccessful in this, it launches itself off, and makes for the nearest thicket—its voice and manner reminding the observer of the European Blackbird."

In the Lydenburg district, writes Mr. T. Ayres, "these Thrushes inhabit the dense forest, and are most easily obtained in the dusk of the evening, when they appear to be more on the move than at other times, chasing each other about and often uttering their short clucking note. They feed on the ground amongst the dead leaves, insects forming their principal food."

Andersson observes in his 'Birds of Damara Land' (p. 116):—"This is one of the commonest species in the Cape Colony, where it is partially migratory, being found most abundantly at the grape and fruit season. It is fond of almost all kinds of fruit, but when these fail, it subsists on beetles and other insects. Its flesh is well-tasted."

According to Mr. E. L. Layard, the nest is like that of the English Blackbird, and is lined with fibres and roots. "The eggs, large for the size of the bird, are generally four in number, of a light verditer-blue, mottled with irregular patches of brown, thickest at the obtuse end. Axis 1·15 inch, diam. 0·85."

Adult male. General colour above dark slaty-grey, with a slight olive tinge on the head and back; the lower back, rump, and upper tail-coverts clearer slaty-grey; wing-coverts like the back, the bastard-wing, primary-coverts, and quills sepia-brown, externally slaty-grey; tail black, the feathers slightly washed with slaty-grey on the edges; lores, sides of face, and ear-coverts dusky slaty-grey; cheeks orange-buff, streaked with black spots along the malar line; chin and upper throat white, tinged with buff, and streaked with rows of longitudinal black spots; lower throat and fore-neck dull ashy-grey, over which a slight tint of orange prevails, though the ashy shade scarcely reaches to the chest; rest of under surface from the chest downwards bright orange, a little paler towards the vent; lower flanks slightly washed with ashy; thighs pale orange; under tail-coverts white, with broad margins of olive-brown, the longer tail-coverts brown with a wedge-shaped spot of white at the end; under wing-coverts and axillaries deep orange; quills dusky below, a little more ashy along the inner web: "bill yellow, brown towards the base and on the culmen; feet yellow; iris brown" (*T. L. Ayres*). Total length 9·5 inches, culmen 1·0, wing 5·25, tail 3·8, tarsus 1·35.

There seems to be very little difference between the summer and winter plumages, but, as a rule, the stripes on the throat are broader during the breeding-season, and the grey on the fore-neck and chest is more distinctly seen, owing to the disappearance of the buff shade which overspreads it in the winter plumage.

Young birds after the first moult are more olive-brown than the adults, and have a few rufous tips to the greater wing-coverts; the throat is very sparsely streaked with blackish, and the grey on the chest is scarcely defined at all.

Adult female. Does not differ from the male in plumage. Total length 8·5 inches, culmen 0·9, wing 4·7, tail 3·35, tarsus 1·7.

Nestlings. Much browner than the adults and having the upper surface streaked with shaft-lines of orange-buff, the wing-coverts being tipped with spots of the same colour. The underparts are paler than in the adults, the throat being white with only a few dusky spots, and the rest of the under surface pale orange with blackish bars to the feathers of the breast and flanks.

The specimens described are in the British Museum, and the one figured by Mr. Seebohm is a male from Durban in the Shelley Collection. [R. B. S.]

TURDUS ABYSSINICUS, *Gm.*

ABYSSINIAN THRUSH.

Le Merle brun d'Abyssinie, Briss. Orn. iii. p. 406 (1760).
Abyssinian Thrush, Lath. Gen. Syn. ii. pt. 1, p. 78 (1783).
Turdus abyssinicus, Gm. Syst. Nat. i. p. 824 (1788); Seebohm, Cat. Birds Brit. Mus. v. p. 228 (1881).
Merula olivacea (nec Linn.), Rüpp. Neue Wirb., Vög. p. 83 (1835).
Turdus olivacinus, Bp. Consp. i. p. 273 (1850); Heugl. Orn. N.O.-Afr. i. p. 382 (1869).
Turdus olivaceus (nec Linn.), Heugl. Syst. Uebers. p. 29 (1856).
Turdus olivaceus habessinicus, Heugl. Orn. N.O.-Afr. i. p. 382 (1869).
Turdus erythrorhynchus, Heugl. J. f. O. 1871, p. 207.
Turdus (Cichloides) olivacinus, Heugl. Orn. N.O.-Afr. iv. App. p. cv (1871).
Peliocichla olivacina, Cab. J. f. O. 1882, p. 319.

T. similis *T. olivaceo*, sed gutture fuscescente, minimè præpectore concolore: notæo olivascenti-brunneo.

The Abyssinian Thrush is well-named, for it appears to be entirely confined to Abyssinia and Shoa, and it has not yet been recorded from Bogos Land. Von Heuglin states that the species is found over the whole of Abyssinia from 7000 to 10,000 feet, and he met with it in Wolo Land up to 12,000 feet (Orn. N.O.-Afr. i. p. 382). Mr. W. T. Blanford obtained a specimen at Senafé in Tigré, and also on Lake Ashangi at 8000 feet (Geol. & Zool. Abyss. p. 357), and says that it was not seen away from the highlands.

In Shoa it would appear to be abundant. It was obtained by Sir W. C. Harris many years ago at Ankober in December, and at Angollalá in January (Seebohm, Cat. Birds Brit. Mus. v. p. 228). The Italian travellers Antinori and Ragazzi have procured specimens in nearly every month of the year, and the former observes that it was "not rare at any of the Italian stations in Arramba and Ankober, breeding in the forests of the Kolla in February." The localities given are, Sciotalit, Denz, Mahal-Uonz, Fechierié-Ghem, Janfridi, Curé, Fallé (Mulo-Galla country) (*cf.* Salvad. Ann. Mus. Genov. (2) i. p. 159, vi. p. 258). Dr. Ragazzi says that it was very common in the parts of Shoa visited by him.

Seebohm gives the habitat of this species as the "highlands of Abyssinia and the Uganda country" (Ibis, 1883, p. 166). His authority for the latter statement is apparently the presence of two specimens in his own collection from "Lake Tsanné in M'tesa's country." These were purchased from M. Bouvier out of the same collection that contained the type of *Geocichla piaggiæ*. I have never been able to fix this "Lake Tsanné," and it is to be noted that neither *G. piaggiæ* nor *T. abyssinicus* have been met with in Uganda, but both have been procured by the Italian naturalists in Shoa. The locality actually intended is probably Lake Tsana in Abyssinia.

Von Heuglin states that he found the species in pairs inhabiting the dense shrub and high trees, with plenty of undergrowth and decaying leaves, on the banks of small streams and in ruins throughout Abyssinia, but only at a height of from 7000 to 10,000 feet. He says that this Thrush

lives a great deal on the ground, for the most part among the bushes and climbing plants. Its call-note is almost identical with that of our Blackbird, and the song and alarm-note are almost exactly the same as those of the last-named species. He found the nest in May in Begemeder, on a little sunny hill overgrown with bushes and high trees. The nest was placed on a broken acacia-stump, and was not built up with clay; otherwise it resembled the nest of *Merula merula*, as did also the eggs, which were hardly to be distinguished from those of our Common Blackbird.

Adult male. General colour above dark olive-brown, slightly tinged with ashy, especially on the lower back, rump, and upper tail-coverts; head a trifle darker than the back; wing-coverts like the back; bastard-wing, primary-coverts, and quills sepia-brown, externally like the back; tail-feathers blackish-brown, slightly washed with grey on the outer webs; lores blackish; ear-coverts and sides of face dark brown; cheeks, throat, and entire breast dull ashy-brown, slightly paler towards the chin, which, with the throat, shows a few rows of triangular black spots; lower breast and abdomen clear orange-rufous, the lower abdomen whitish; thighs orange-rufous; lower flanks slightly washed with ashy-brown; under tail-coverts dusky brown, with a long wedge-shaped mark of white towards the ends; under wing-coverts and axillaries bright orange-rufous; quills dusky brown below, with a slight shade of orange along the inner web: "bill bright fiery-red; feet orange; iris brown; eyelids fiery-red" (*Von Heuglin*). Total length 8·5 inches, culmen 0·9, wing 4·2, tail 3·4, tarsus 1·2.

Adult female. Not different from the male. Total length 8·5 inches, culmen 0·85, wing 4·75, tail 3·7, tarsus 1·25.

Young. Darker than the adults, but with orange-buff shaft-streaks; under surface buffy-white on the throat and orange on the breast and abdomen, smudged with blackish-brown spots and bars on the ends of the feathers.

Antinori gives the soft parts of an adult female killed in December as follows:—"Bill orange-red; feet orange-yellow; iris smoky-brown." Males obtained in January and February had the bill red, the feet orange, the iris dull hazel; while a female killed in June had the bill black and yellow, and the feet yellow.

Dr. Ragazzi gives the colour of the bill as red in a specimen obtained in December, the feet being yellowish-red, the claws slightly paler, and the iris chestnut. Another male procured in the same month had the bill orange-red, the feet also orange-red but paler, and the iris reddish-brown.

The specimens described are in the British Museum from Shoa, and the bird figured is from "Lake Tsanné" in the Seebohm Collection. [R. B. S.]

TURDUS ELGONENSIS (*Sharpe*).

JACKSON'S THRUSH.

Turdus olivacinus (nec Bp.), Fischer, J. f. O. 1880, p. 144.
Merula elgonensis, Sharpe, Ibis, 1891, p. 445.

T. similis *T. abyssinico* et hypochondriis aurantiaco-rufis, abdomine concoloribus: gutture et præpectore clarè cineraceis et notæo schistaceo distinguendus: rostro et pedibus flavis.

Mr. F. J. Jackson discovered this Thrush during his celebrated journey to Uganda in 1889. He first met with it in Kikuyu, in British East Africa, in August 1889, and afterwards on Mount Elgon, at a height of 8000 feet, in February 1890. His recent collections contain an example from the Eldoma Ravine in the Mau district, where he met with it on the 17th of March, 1896. It is doubtless this species which Fischer obtained near Lake Naiwascha, and called *T. olivacinus* (J. f. O. 1880, p. 144).

Mr. Oscar Neumann found this Thrush in the Loita Mountains in North-western Masailand, west of Mossiro, near the frontier between the German and British possessions. He also procured specimens in the Mau country.

T. elgonensis is closely allied to *T. abyssinicus*, and is of about the same size. As in the last-named species, the flanks are of a similar orange-rufous colour to the breast and abdomen, but the upper surface is always much more slaty-grey, and the throat and chest are clear slaty-grey, not olivaceous-brown as in *T. abyssinicus*.

The streaks on the throat in the present species are all but obsolete, whereas in *T. abyssinicus* the black spots on the throat are very distinct. The slaty-grey colour does not seem to be extended so far over the chest as does the ashy-brown colour of *T. abyssinicus*. The rufous of the abdomen is also slightly deeper in colour and not of such a bright orange tint. Total length 8·4 inches, culmen 0·95, wing 4·2, tail 3·4, tarsus 1·2.

A male procured by Mr. Jackson in the Kikuyu country in August had the "bill orange-yellow, the feet dirty orange-yellow, the iris brown, and the eyelids orange-yellow." Another male, obtained on Mount Elgon in February, had the same colours of the soft parts, but the feet were "pale dusky yellow."

The descriptions and figures are taken from the type specimen in the British Museum.

[R. B. S.]

TURDUS CABANISI, *Bp.*

CABANIS'S THRUSH.

Variété du Griverou, Levaill. Ois. d'Afr. iii. p. 8, pl. 100 (1802).
Merula obscura (nec Linn.), Smith, Rep. S. Afr. Exped., App. p. 45 (1832).
Turdus obscurus, Smith, Ill. Zool. S. Afr. pl. xxxvi. (1839).
Turdus cabanisi, Bp. MSS.; Cab. Mus. Hein. Th. i. p. 3 (1850).
Turdus smithi, Bp. Consp. i. p. 274 (1850).
Planesticus cabanisi, Bp. C. R. xxxviii. p. 4 (1854).
Turdus olivaceus (nec Linn.), Ayres, Ibis, 1869, p. 292.
Turdus deckeni (nec Cab.), Gurney, Ibis, 1871, p. 267.
Psophocichla cabanisi, Heine & Reichen. Nomencl. Mus. Hein. p. 5 (1882).
Peliocichla cabanisi, Cab. J. f. O. 1882, p. 319.

T. gutture fusco-nigro striato: pedibus flavis: hypochondriis sordidè cinerascenti-brunneis, pectore concoloribus: notæo cinerascente.

It is not a little surprising that such a distinct species as the present should have been united to *Turdus olivaceus* by myself and other writers, but the series of specimens of *T. cabanisi* at my disposal was not large when I came to this conclusion in 1871 (Cat. Coll. Afr. B. p. 21).

The species is easily distinguished from *T. olivaceus* and its allies by the dull ashy-grey colour of the sides of the body and the paler orange-buff colour of the abdomen. The name of *T. cabanisi* was first published by Professor Cabanis from a specimen so named by Bonaparte, and the type is in the Heine Collection. Bonaparte himself seems to have forgotten the circumstance, as he also named the bird *Turdus smithi* in his 'Conspectus,' published in the same year (1850).

In 1854, however, he dropped the name of *T. smithi* and used only that of *T. cabanisi*, by which the species has since been known.

This Thrush has not yet been recorded from the Cape Colony, but Captain Shelley had a specimen in his collection received from Mr. Butler, the taxidermist of Cape Town, which was supposed to have been got by him in that district.

Sir Andrew Smith, who first described the species as *Merula obscura* (a specific name already given by Linnæus to another species of Thrush), states that it "inhabits the country towards the sources of the Orange River" (Rep. Exped. S. Afr. p. 45). Wahlberg met with it in "Caffraria," by which is meant the Transvaal of the present day; and the British Museum has now several specimens from the neighbourhood of Potchefstroom, where, according to Mr. Ayres, it is common all the year round. Chapman also procured a specimen in the Lake N'gami district (Sharpe, Cat. Coll. Afr. B. p. 21). Andersson says that he has never seen the species to the west of the Lake-country (B. Damara Land, p. 116).

According to Mr. T. Ayres (Ibis, 1869, p. 292) this Thrush is "retiring in its habits, frequenting thickets and dense hedgerows, and occasionally uttering a low, short chuck, very similar in sound to that of the Redwing of Europe."

Adult male. General colour above slaty-brown, with scarcely any tinge of olive; the head exactly like the back, and the lower back and upper tail-coverts not perceptibly greyer than the rest of the upper surface; wing-coverts like the back, the bastard-wing, primary-coverts, and quills sepia-brown, externally like the back; tail blackish, with a slight grey shade on the margins of the feathers; lores and sides of face slaty-brown; cheeks dingy greyish-white like the throat, which is spotted with narrow lines of dusky blackish streaks; lower throat, fore-neck, breast, and sides of the body dingy ashy-grey, slightly paler on the latter; lower breast and abdomen pale orange-buff, as also the thighs; under tail-coverts dull slaty-brown, with a wedge-shaped mark of dull white at the end of the feathers; under wing-coverts and axillaries rich orange; quills sepia-brown below, ashy along the inner webs: "bill deep bright chrome-yellow; tarsi and feet chrome; iris pale ash-colour, eyelids yellow; bare skin about the eyes and ear-coverts pale yellow, but sparingly covered with feathers" (*T. Ayres*). Total length 9 inches, culmen 1·0, wing 4·85, tail 3·75, tarsus 1·25.

Adult female. Similar to the male in colour. Total length 9 inches, culmen 1·0, wing. 4·8, tail 3·5, tarsus 1·25.

Immature birds have triangular spots of orange-buff at the end of the median and greater coverts, while the underparts are paler than those of the adult and are mottled with broad blackish tips to the feathers. They differ from the nestlings of *T. olivaceus* in having a grey shade over the throat and chest, the latter being slightly mottled with blackish ends to the feathers.

The descriptions are taken from Transvaal specimens, and the one figured in the Plate is in the Shelley Collection, and is said to have been procured in the Cape Colony by Mr. Butler.

[R. B. S.]

TURDUS DECKENI, *Cab.*

VON DER DECKEN'S THRUSH.

Turdus deckeni, Cab. J. f. O. 1868, p. 412; Reichen. Vög. deutsch. Ost-Afr. p. 233 (1894).
Peliocichla deckeni, Cab. J. f. O. 1882, p. 319.
Turdus cabanisi (nec Bp.), Shelley, P. Z. S. 1885, p. 226.

T. similis *T. cabanisi*, sed suprà brunnescentior, et hypochondriis olivascenti-brunneis distinguendus.

The exact part of East Africa where this Thrush was discovered by Von der Decken is not known, but, as Dr. Reichenow points out (*l. c.*), the species is apparently restricted to the Kilimanjaro district. Sir Harry Johnston says that it is here almost confined to the inhabited portions. He procured specimens at a height of from 5000–6000 feet (Shelley, P. Z. S. 1885, p. 226).

Adult male. Similar to *T. cabanisi*, but much browner above and decidedly more dusky underneath, the sides of the body being olive-brown with an ochreous tinge, instead of being ashy-grey. The throat is dusky greyish-brown right up to the chin, which alone is white, the throat being almost imperceptibly streaked with dusky blackish. Total length 8·5 inches, culmen 0·95, wing 4·45, tail 3·4, tarsus 1·25.

There is very little difference in colour between the two specimens in the British Museum from Kilimanjaro; but the one procured by Sir Harry Johnston at 5000 feet has the thighs bright orange-rufous, whereas in that obtained at 6000 feet the thighs are olive-brownish like the flanks.

Mr. Seebohm did not figure this species, as he apparently considered *T. elgonensis* to be the same as *T. deckeni*; but the brown flanks of the latter species show that it belongs to the group of *T. cabanisi*, whereas *T. elgonensis* is allied to *T. abyssinicus*.

The specimen described is in the British Museum from Kilimanjaro. [R. B. S.]

TURDUS MILANJENSIS, *Shelley*.

MILANJI THRUSH.

Turdus milanjensis, Shelley, Ibis, 1893, p. 12; 1894, p. 9; 1896, p. 231; 1897, p. 540.

T. similis *T. cabanisi*, sed ubique saturatior: rostro et pedibus flavis: pectore et hypochondriis saturatè cineraceis, olivaceo tinctis, et gutture latiùs nigro striato distinguendus.

This is a dark mountain form of *T. cabanisi*, but is easily recognizable. It was discovered by Mr. Alexander Whyte on Mount Milanji in Nyasa Land, at a height of 6000 feet, in September, October, and November. Mr. Whyte says that it is the common Thrush of the Milanji Plateau and has a sweet song (Shelley, Ibis, 1893, p. 12). Mr. Whyte has also met with the species on the Nyika Plateau in Northern Nyasa Land in June (Shelley, Ibis, 1897, p. 540). He has also procured it at Zomba, whence a specimen has also been sent by Consul Alfred Sharpe (Shelley, Ibis, 1896, p. 231). In Mr. Whyte's last collection there is also an example of this species procured on Mount M'losa, at 5500 feet, on the 22nd of November, 1896.

Adult. Very similar to *T. cabanisi*, but much darker. Above dusky slaty-brown; the throat with coarse and broad rows of black spots; the fore-neck, chest, and sides of the body dark ashy-brown tinged with olive: "bill and feet red; eyelid reddish-orange, very prominent" (*A. Whyte*). Total length 8·5 inches, culmen 0·95, wing 4·7, tail 3·3, tarsus 1·2.

There is no difference in the colour of the sexes. The female measures in total length 9 inches, culmen 0·95, wing 4·6, tail 3·3, tarsus 1·2.

The figure in the Plate is taken from the type specimen in the British Museum.

[R. B. S.]

TURDUS LIBONYANUS, *Smith.*

KURRICHAINE THRUSH.

Merula libonyana, Smith, Rep. Exped. S. Afr., App. p. 45 (1836).
Turdus libonyanus, Smith, Ill. Zool. S. Afr., Aves, pl. xxxviii. (1839); Seebohm, Cat. Birds Brit. Mus. v. p. 229 (1881).
Peliocichla libonyana, Cab. J. f. O. 1882, p. 319.

T. gutture nigro, obsoletè striolato: strigâ malari nigrâ distinctâ: pedibus flavis: notæo concolore, pallidè schistaceo: hypochondriis clarè aurantiacis: tibiis quoque aurantiacis: præpectore et pectore summo schistascentibus.

This species was discovered by Sir Andrew Smith near Kurrichaine. It has been also met with near Eschowe, in Zululand, by Messrs. R. B. and J. D. S. Woodward (Sharpe, Ibis, 1897, p. 502). There are also several specimens in the British Museum procured by Mr. T. Ayres in the Eastern Transvaal, and he has sent examples from Rustenburg, where he says that it is the commonest Thrush in the Magaliesbergen (Ibis, 1879, p. 389; 1882, p. 250). Dr. Exton also met with the species at Kanye (lat. 24° 50′ S., long. 25° 40′ E.) in Matabeleland (Sharpe, ed. Layard's B. S. Afr. p. 199).

I refer specimens in the British Museum to the true *T. libonyanus* from the following localities:—Kurrichaine, Eschowe, Swaziland, July 24 (*T. E. Buckley*); Rustenburg, E. Transvaal (*T. Ayres*).

Jameson procured a specimen on the Umvuli River, and Mr. T. Ayres, who accompanied his expedition, says that occasionally a pair is to be found here and there about the country of the Mashonas (Ibis, 1882, p. 250).

Adult male. General colour above light ashy-grey with a slight tinge of olive, the head scarcely more dusky than the back; wing-coverts like the back; bastard-wing, primary-coverts, and quills light brown, externally ashy-grey like the back, the primaries with hoary-grey margins, and the secondaries with pale fringes to the ends; centre tail-feathers grey like the back, the others sepia-brown, externally grey; lores and sides of face ashy-grey, the ear-coverts with whitish shaft-lines; feathers above and below the eye white; cheeks white, streaked with black; the malar line and sides of the throat broadly streaked with rows of black spots; the centre of the throat pure white; lower throat and fore-neck pale ashy, as well as the sides of the neck, the chest faintly washed with orange; breast and abdomen white; sides of body, flanks, and thighs light orange; axillaries and under wing-coverts also light orange, scarcely deeper in tint than the sides of the body; quills dusky below, pale orange-buff on the inner webs: "bill bright orange; tarsi and feet pale chrome-yellow; iris dusky umber; eyelids bright orange" (*T. Ayres*). Total length 8·8 inches, culmen 0·85, wing 4·6, tail 3·6, tarsus 1·2.

Adult female. Similar to the male in colour, but browner on the chest and fore-neck, these parts being purer ashy-grey. Total length 8·5 inches, culmen 0·9, wing 4·5, tail 3·6, tarsus 1·2.

There is not much difference between the summer and winter plumages of this Thrush, excepting that the colours are much purer in the breeding-plumage, and the old males seem to get very pale ashy on the fore-neck and chest, the females being always browner on these parts of the

body. The throat is almost always uniform white or buffy-white, the centre of the throat seldom streaked with black. The descriptions are taken from a pair of birds in the British Museum.

The principal figure in the Plate is drawn from a female from Rustenburg in the Seebohm Collection. The hinder figure, with more orange on the chest, appears to have been drawn from a specimen of the race called *T. tropicalis*. [R. B. S.]

TURDUS TROPICALIS, *Peters*.

PETERS'S THRUSH.

Turdus libonyanus (nec Smith), Finsch & Hartl. Vög. Ost-Afr. p. 280 (1870); Fischer & Reichen. J. f. O. 1880, p. 144.
Turdus libonyanus, pt. (nec Smith), Seebohm, Cat. Birds Brit. Mus. v. p. 229 (1881).
Turdus tropicalis, Peters, J. f. O. 1881, p. 49.
Peliocichla tropicalis, Cab. J. f. O. 1882, p. 320.
Turdus libonyanus, var. *tropicalis*, Seebohm, Ibis, 1883, p. 165.

T. similis *T. libonyano*, sed pectore cinerascente, aurantiaco clarè lavato distinguendus.

I HAVE found it impossible to decide, from the material at my disposal, whether this species is distinct or not from *T. libonyanus*. It is said to be a smaller bird, but there is nothing in the measurements which would justify this supposition.

T. libonyanus varies in length of wing from 4·05 to 4·9 inches, a difference of three quarters of an inch, the wing of the females being only a trifle shorter than that of the males. In the birds which I consider to be *T. tropicalis* the wing varies in length from 4·0 to 4·8 inches; so that there is no valid difference to be found in the length of the wing of the two races.

That the two forms are closely allied and are probably identical will be admitted by any ornithologist who examines our series in the British Museum, and the wash of orange-colour on the breast of *T. tropicalis* is probably only a sign of autumn or winter plumage. The series from Nyasa Land in the British Museum, obtained by Sir Harry Johnston and Consul Alfred Sharpe, belong mostly to the form known as *T. tropicalis*, and have the chest distinctly washed with orange. There are, however, many specimens which it is almost impossible to distinguish from Transvaal examples of *T. libonyanus*. Those which show the greatest amount of orange tint were obtained in June and July, and the greyer-chested birds from August to December. In the latter month birds in immature plumage and in moult were procured; but there is not a single specimen killed between January and June, and whether the species is absent from Nyasa Land during those months will have to be discovered. The examples of *T. libonyanus* in the British Museum were met with in May, June, and August, and no young birds from the south of the Zambesi have as yet been examined by me.

In Nyasa Land Mr. Alexander Whyte has procured specimens at Zomba between June and December (Shelley, Ibis, 1896, p. 230), at Fort Lister (3300 feet) in July (Shelley, Ibis, 1894, p. 468), and at Fort Hill in the same month. Consul Alfred Sharpe has obtained the species at Chiradzulu.

The late Dr. Bradshaw obtained a specimen of this Thrush on the Zambesi, and there is a skin from Tete, procured by Sir John Kirk during the Livingstone Expedition, in the British Museum. The original example in the Berlin Museum came from Inhambane, and Dr. Reichenow has identified one of our specimens from Zomba in Nyasa Land as agreeing with the type of *T. tropicalis*. I am also of opinion that if *T. tropicalis* is capable of separation from *T. libonyanus*, it is this smaller form which extends to East Africa. Dr. Fischer has recorded it from Mozambique in May

(Fischer & Reichen. J. f. O. 1880, p. 144), and Sir John Kirk has sent it from Ugogo (Shelley, P. Z. S. 1881, p. 574). Specimens from Mamboio are also in the Shelley Collection. It will be likewise this form which Dr. Stuhlmann procured at Matamondo in Unguru in September, and at Mbusini in Useguha in August (Reichen. J. f. O. 1889, p. 286), and Fischer has also recorded it from Mandera, Useguhua, and Maurui (J. f. O. 1885, p. 141).

T. tropicalis is so closely allied to *T. libonyanus* as to be separated with difficulty. It seems, however, to be a lighter bird, especially on the fore-neck and chest, which are very pale ashy-brown, pervaded with the orange colour of the sides of the breast. Total length 8·5 inches, culmen 0·8, wing 4·15, tail 3·25, tarsus 1·2.

A bird obtained by Dr. Bradshaw on the Zambesi is apparently in winter plumage, and is browner on the upper surface than any specimen of *T. libonyanus* examined by me. Total length 9 inches, wing 4·8.

Dr. Stuhlmann gives the soft parts as follows :—" Bill vermilion-red ; feet dark reddish-yellow ; iris greyish-brown ; eyelid vermilion-red " (*cf.* Reichen. J. f. O. 1889, p. 286).

The specimen described is from Tete, and the hinder figure of *T. libonyanus* in the Plate seems to have been taken from a specimen of *T. tropicalis* : but I have not been able to find any indication of the bird which Mr. Seebohm figured ; it was doubtless in his own Collection. [R. B. S.]

TURDUS VERREAUXI, *Bocage*.

VERREAUX'S THRUSH.

Turdus verreauxi, Bocage, Jorn. Sci. Lisb. ii. p. 340 (1870); Sharpe, ed. Layard's B. S. Afr. p. 202 (1876).
Turdus libonyanus (nec Smith), Sharpe, Cat. Coll. Afr. B. p. 21 (1871); Gurney, in Anderss. B. Dam. Ld. p. 115 (1872).
Turdus libonyanus, pt., Sharpe, ed. Layard's B. S. Afr. p. 199 (1876); Seebohm, Cat. Birds Brit. Mus. v. p. 229 (1881).
Turdus libonyanus (nec Smith), Bocage, Orn. Angola, p. 266 (1881).
Peliocichla schuetti, Cab. J. f. O. 1882, p. 319.
Turdus libonyanus, var. *schuetti*, Seebohm, Ibis, 1883, p. 165.

T. similis *T. libonyano*, sed minor, et notæo clariorè schistaceo: hypochondriis pallidioribus, aurantiaco-flavis, distinguendus.

This is a very pale form of *T. libonyanus*, which it replaces in South-western Africa. Seebohm (Ibis, 1883, p. 165) considered that it was the summer-plumaged bird which was so pale, and that *T. tropicalis* was the newly moulted autumn form.

Although neither *T. tropicalis* nor *T. verreauxi* are very distinct races of *T. libonyanus*, I have never seen any specimen of the group of so light a grey colour as Andersson's Ombongo example. The material for the determination of these Thrushes is at present quite insufficient to form any direct conclusion, and until a series has been collected in every month of the year in one locality we cannot expect to understand the changes of plumage in any one of these allied species.

The present species was described by Professor Barboza du Bocage from a specimen sent by Anchieta from Caconda in Benguela, and in his 'Ornithologie d'Angola' (p. 263) he has given a further account of the specimen. In 1886 I could not make up my mind as to what the species could be, and I gave a translation of Bocage's original description (Sharpe, ed. Layard's B. S. Afr. p. 202); but Seebohm, in the fifth volume of the 'Catalogue of Birds' (p. 230) united *T. verreauxi* to *T. libonyanus*, though he observed as follows:—"Examples from Angola are intermediate in the colour of the upper parts between *T. libonyanus* and *T. tephronotus*, and may prove to be a distinct species, in which case they will stand as *T. verreauxi*."

Besides the original example from Caconda, the two specimens recorded by Professor Bocage as *T. libonyanus* from Quillengues (Orn. Angola, p. 267) must be referred to this species. It is certainly the same pale form that was procured by Andersson on the River Okavango, the only place that he met with it (B. Damara Land, p. 115). His specimen from Ombongo is in the British Museum.

In Angola proper the types of *T. schuetti* were obtained by the German explorers Schütt and Von Mechow at Malange and at the foot of the Cahanga passes. My friend Dr. Reichenow was the first to express an opinion that *T. schuetti* was the same species as *T. verreauxi*; and that this

surmise was correct I have been able to prove by a comparison of the type specimen of the latter bird, which Professor Barboza du Bocage most kindly sent from Lisbon for me to examine.

T. verreauxi is certainly a paler bird than *T. libonyanus* and *T. tropicalis*, but is especially so in winter plumage, when the upper parts are pale blue-grey. The orange tint on the sides of the body is also lighter than in *T. libonyanus*. The wing measures from 4·3–4·4 inches.

[R. B. S.]

TURDUS CINERASCENS, *Reichen.*

TABORA THRUSH.

Turdus libonyanus (nec Smith), Schalow, J. f. O. 1883, p. 367; Emin, J. f. O. 1891, p. 60.
Turdus libonyanus, pt., Reichen. Vög. deutsch. Ost-Afr. p. 233 (1894).
Turdus cinerascens, Reichen. Orn. MB. vi. p. 82 (1898).

T. similis *T. verreauxi*: præpectore pallidè cinerascente, minimè aurantiaco lavato: suprà brunnescenti-griseus, nec brunneus, minimè olivascens: corporis lateribus clarè aurantiaco-rufis.

Dr. Reichenow has separated this species from *T. libonyanus* and *T. verreauxi*. He has specimens in the Berlin Museum obtained by Emin Pasha at Tabora, and by Böhm at Kakoma.

This race of *T. libonyanus* is said by Dr. Reichenow to be very closely allied to *T. schuetti* from Angola, but differs from the latter in its pale ashy fore-neck and chest, which show no shade of an orange wash. The upper surface is said to be of a brownish-grey colour, instead of being brown, without a tint of olive, and the sides of the body are clear orange-rufous.

These characters answer so well for some of the specimens of *T. verreauxi* from South-western Africa that I have grave doubts as to whether *T. cinerascens* is distinct from the last-named species, and I expect that, when allowance has been made for the difference of plumage due to season, *T. verreauxi* and *T. cinerascens* will both be found to be seasonal variations of *T. tropicalis*.

Böhm says that it was not very plentiful near Kakoma on the edges of roads and in the savanna. Of a male bird procured in April he gives the soft parts as follows:—"Feet and claws pale brownish-yellow, the iris brown, and the gape and eyelid bright yellow" (*cf.* Schalow, J. f. O. 1883, p. 367). Another male obtained in March had the "bill yellow, with the tip greyish-horn-colour; behind the eye a bare space of yellow; the feet horny-buff."

A male bird obtained by Emin Pasha at Tabora in Uniamyembe in August had the "bill bright orange-red; feet orange-yellow; iris umber-brown; bare spot behind the eye and eyelid vinaceous-red." Another male had the "eyelids yellow, and the bare spot behind the eye grey" (Emin, J. f. O. 1891, p. 60). [R. B. S.]

TURDUS PELIOS, *Bp.*

ETHIOPIAN THRUSH.

Turdus pelios, Bp. Consp. i. p. 273 (1850); Seebohm, Cat. Birds Brit. Mus. v. p. 230 (1881: pt.).
Turdus icterorhynchus, Württ. MSS.; teste Heuglin, Orn. N.O.-Afr. p. 383 (1869).
Peliocichla pelios, Cab. J. f. O. 1882, p. 320.
Turdus (*Peliocichla*) *cryptopyrrhus* (nec Cab.), Hartert, J. f. O. 1886, p. 577.
Turdus chiguancoides (nec Seeb.), Reichen. J. f. O. 1897, p. 51.

T. rostro et pedibus flavis: abdomine medio albo: hypochondriis clarè aurantiaco-rufis: subcaudalibus albis vel angustè brunneo marginatis: tibiis aurantiaco-rufis, hypochondriis concoloribus, his conspicuè aurantiacis: notæo brunnescente: præpectore cinerascenti-brunneo vel pallidè cineraceo: gutture saturatè brunneo striato.

The present species ranges from Bogosland to Shoa, south to Uganda and west to the Niger, the Gold Coast, and Liberia. The specimens from the last-named parts of West Africa are slightly darker than the typical bird from Abyssinia, but those from Uganda and also from the Niger cannot in any way be separated from Abyssinian examples.

Heuglin says that *T. pelios* is by no means a rare species in the warmer parts of Abyssinia, but does not occur in the mountains. He met with it in Galabat, in Senár, Takah, Kordofan, and on the White Nile, and as far west as Bongo (Orn. N.O.-Afr. p. 383); but the specimens obtained in the latter district will probably be found to belong to the dark form of the West-African forests, *T. saturatus*. The same is probable of the specimens procured by Antinori in the Djur country (Cat. descr. Ucc. &c. p. 42).

The specimens obtained by Mr. F. J. Jackson at N'tebi in March and August, and at Busoga in Uganda in November, appear to me to be absolutely inseparable from Abyssinian examples of *T. pelios*; and Dr. Reichenow writes to me that he has specimens from Bukoba, Sesse Island in Uganda, Mjongo in Uganda, and from Kagehi on the southern shores of the Victoria Nyanza, which have been identified by himself and other writers as *T. bocagii*, but which now turn out to be identical with specimens from Wadelai and the Niger and Gold Coast districts. The true *T. bocagii*, however, has also been sent from Bukoba.

Dr. Reichenow believes that the Abyssinian form of this Thrush, true *T. pelios*, is distinct from that of the localities above mentioned. I cannot agree with this, as it is impossible, to my mind, to find any difference between Abyssinian examples and others from Uganda and the Niger.

A specimen obtained by Mr. Esler at Ailat in the Bogos country is in the British Museum (Seebohm, Cat. Birds Brit. Mus. v. p. 231), and Antinori obtained a couple of female specimens in the Anseba Valley in May. He also met with it at Mensa and Sciotel in Bogosland (Antin. & Salvad. Viagg. Bogos, p. 93). Mr. Jesse likewise procured specimens at Gabena-weldt-Gonfallon and Waliko in the Anseba Valley in August (Finsch, Tr. Zool. Soc. vii. p. 242).

In Western Africa the present species has been procured by the late Mr. W. A. Forbes at Shonga in December (Ibis, 1883, p. 538), and Mr. Hartert met with it at Loko in April and May

and at Keffi Abd-es-Ssenga in August (J. f. O. 1886, p. 577). Mr. F. Nicholson also records it from Abeokuta (P. Z. S. 1878, p. 129). In Togoland it has been procured on the Misa Heights by Mr. E. Baumann in May (Reichen. J. f. O. 1897, p. 51). Several specimens from Fantee are in the British Museum. Mr. H. F. Blissett obtained it at Manpon in May and August, and on the River Prah in May (Seebohm, Cat. Birds Brit. Mus. v. p. 231). Dr. Büttikofer records *T. pelios* from Cape Grand Mount in Liberia (Notes Leyden Mus. vii. p. 176, 1885), and the specimen I have seen from this locality confirms his identification.

Von Heuglin says that this Thrush lives in pairs along the banks of running streams in Abyssinia, and keeps more to the ground and the low bushes than to the high trees. On the Niger Mr. Hartert found the species not rare in high brush-wood, and says that the call-note greatly resembles that of the English Song-Thrush.

A specimen from Shonga differs from some of the Abyssinian and Uganda examples in its pale grey chest and light orange-coloured flanks, the sides of the body being very little paler than the under wing-coverts and axillaries: "bill orange-yellow; feet dusky greenish-yellow or brownish-yellow; iris brown" (*W. A. Forbes*). Total length 9·5 inches, culmen 0·9, wing 4·7, tail 3·6, tarsus 1·15.

The light flanks and chest are probably only indications of the breeding-plumage. They are not specific characters, as I have compared some of the N.E. African specimens with the Niger ones, and they are identical. The Gold Coast birds are slightly darker, but do not attain to the deep tints of *T. saturatus*, which is a darker bird everywhere.

Mr. Hartert says that in a young bird procured by him on the Niger, the bill was yellow, the feet pale brown, and the iris chestnut-brown.

Adult. General colour above ashy-olive-brown, the head like the back; wing-coverts like the back; bastard-wing, primary-coverts, and quills light brown, externally ashy-olive like the back; tail-feathers light brown, externally shaded with ashy-olive; lores and sides of face brown, with narrow whitish shaft-lines on the ear-coverts; feathers below the eye whitish; cheeks whitish, streaked with blackish and with distinct blackish streaks along the malar line; throat white, with only a few dusky brown streaks; lower throat, fore-neck, and chest dull ashy-brown, with dusky shaft-lines; breast paler ashy-brown; abdomen white; sides of body and thighs pale orange; under tail-coverts white, with a few of the feathers margined with brown near the base; under wing-coverts and axillaries bright orange-rufous; quills dusky below, the quill-lining light orange-rufous: "bill yellow; feet pale greenish-yellow; iris dusky brown" (*Von Heuglin*). Total length 8 inches, culmen 0·85, wing 4·35, tail 3·5, tarsus 1·3.

The description is taken from a specimen in the British Museum from Abyssinia, and the figure has been drawn from an Abyssinian example in the Seebohm Collection. [R. B. S.]

TURDUS SATURATUS (*Cab.*).

WEST-AFRICAN THRUSH.

Turdus pelios, auct., ex Afr. occ. æquatoriali.
Turdus icterorhynchus (nec Württ.), Sharpe & Bouvier, Bull. Soc. Zool. France, 1876, p. 43.
Turdus libonyanus (nec Smith), Reichen. J. f. O. 1877, p. 30.
Peliocichla saturata, Cab. J. f. O. 1882, p. 320.
Turdus pelios, var. *saturatus*, Seebohm, Ibis, 1883, p. 167.
Turdus saturatus, Reichen. J. f. O. 1896, p. 66.

T. similis *T. pelio*, sed ubique saturatior: præpectore saturatè brunneo.

This is merely a dark race of *T. pelios*, which it replaces in the forest districts of West Africa from the Cameroons and Loango, and it probably extends throughout the Congo Region to the west of the Nile watershed, but of this we have no evidence at present.

Specimens are in the British Museum from the Cameroons, whence also Dr. Reichenow has recorded the species (J. f. O. 1896, p. 66). The Museum has also examples from Gaboon (*cf.* Verr. Rev. Zool. 1855, p. 417), and Cassin says that Du Chaillu obtained this Thrush on the Camma, Moonda, and Muni Rivers (Proc. Philad. Acad. 1859, p. 42). My friend the late Henry Ansell also sent it from the Ogowé River and the Elobe district in Gaboon (Seebohm, Cat. Birds Brit. Mus. v. p. 231). On the Loango coast it was obtained by Dr. Falkenstein (Reichen. J. f. O. 1877, p. 30), and Dr. Lucan and M. Petit met with it at Chinchonxo on the Lower Congo (Sharpe and Bouvier, Bull. Soc. Zool. France, 1876, p. 43). Several specimens procured by these travellers at Landana are in the Seebohm Collection.

Adult male. Similar to *T. cryptopyrrhus* and *T. pelios*, but everywhere darker in colour, especially on the throat and chest, the blackish streaks on the former being small and nearly obsolete; the flanks deep orange-rufous, like the under wing-coverts and axillaries: "bill golden-yellow; feet pale flesh-colour; iris hazel-brown" (*A. Reichenow*). Total length 9 inches, culmen 0·9, wing 4·6, tail 3·5, tarsus 1·15.

Adult female. Similar to the male. Total length 8·5 inches, culmen 0·9, wing 4·2, tail 3·1, tarsus 1·1.

The descriptions are taken from specimens in the Seebohm Collection from Landana, and the hinder figure on the Plate is drawn from a Landana skin in the same Collection. [R. B. S.]

TURDUS BOCAGII (*Cab.*).

BOCAGE'S THRUSH.

Peliocichla bocagii, Cab. J. f. O. 1882, p. 320.
Turdus pelios, var. *bocagii*, Seebohm, Ibis, 1883, p. 166.
Turdus libonyanus (nec Smith), Schalow, J. f. O. 1886, pp. 412, 420.
Turdus bocagii, Cab. J. f. O. 1886, p. 397; Matschie, J. f. O. 1887, pp. 135, 155.

T. similis *T. pelio*, sed saturatior: pectore et abdomine summo aurantiaco-fulvis distinguendus.

Bocage's Thrush was described by Professor Cabanis from Angola. I have never seen a specimen from this country, but one from Bukoba on the Victoria Nyanza was presented to Mr. Seebohm by the Berlin Museum. Dr. Reichenow informs me that specimens collected in the Marungu district by the late Dr. Richard Böhm are true *T. bocagii* and have been compared with the type. Dr. Schalow and Dr. Matschie state that Böhm met with the species on the Lufuku River in July and August, on the Lualaba in October, on the Lugoma Ridge in October and November, and on the Lufua River in November (*cf.* Schalow, J. f. O. 1886, p. 412; Matschie, J. f. O. 1887, pp. 135, 155). Young birds were obtained on the Lualaba in November.

Dr. Reichenow assures me that examples procured by Dr. Stuhlmann at Bukoba on the Victoria Nyanza are identical with the type specimen from Angola; and the single individual from Bukoba, in the Seebohm Collection, certainly has the orange colour spread over the whole breast and upper abdomen. Whether this orange tint is of specific value, or whether it is merely an incidental character of winter plumage, a further series of specimens collected at all times of the year alone can show. At present the evidence points to the existence of a race of *T. pelios* with an orange-rufous breast and upper abdomen, ranging from Angola to the western Tanganyika district and thence northwards to the Victoria Nyanza.

Adult male. Differs from *T. saturatus* in having the orange-rufous tint of the flanks extended over the lower breast and upper abdomen, only the lower abdomen being white: "bill reddish-yellow; feet light yellow; claws light horn-brown; iris brown; bare space behind the eye yellow; eyelids reddish-yellow" (*R. Böhm*). Total length 8·5 inches, culmen 0·9, wing 4·75, tail 3·3, tarsus 1·2.

The description is taken from a specimen obtained by Dr. Stuhlmann at Bukoba, and presented to Mr. Seebohm by the Berlin Museum. [R. B. S.]

TURDUS STORMSI, *Hartl.*

STORMS'S THRUSH.

Turdus stormsi, Hartl. Bull. Mus. Belg. iv. p. 148, pl. iii. (1886).

T. similis *T. bocagii*, sed subtùs magis aurantiaco-rufescens, et subcaudalibus quoque aurantiacis, abdomine concoloribus distinguendus.

Dr. Hartlaub described this species from a specimen sent by Captain Storms from the neighbourhood of Lake Tanganyika. Dr. Reichenow believes that it is the young of *T. bocagii*, and that the type specimen is immature is evident from the orange-buff spots at the end of the wing-coverts. There is no species, however, of the *T. libonyanus* group which has the under tail-coverts orange-coloured, as is shown in Dr. Dubois' picture of the type of *T. stormsi* (*l. c.*), or in Mr. Keulemans' figure which accompanies this article. It may be, therefore, that *T. stormsi* will prove to be a richly-coloured forest race of *T. bocagii*, and as such I have kept it distinct.

The figure has been drawn by Mr. Keulemans from the type in the Brussels Museum.

[R. B. S.]

TURDUS CRYPTOPYRRHUS, *Cab.*

SENEGAMBIAN THRUSH.

Turdus pelios, pt. (nec Bp.), Hartl. Orn. W.-Afr. p. 75 (1857).
Turdus chiguancoides, Seebohm, Cat. Birds Brit. Mus. v. p. 231 (1881).
Peliocichla cryptopyrrha, Cab. J. f. O. 1882, p. 320.
Psophocichla cryptopyrrha, Heine & Reichen. Nomencl. Mus. Hein. p. 5 (1882).
Turdus pelios, var. *cryptopyrrhus*, Seebohm, Ibis, 1883, p. 166.

T. rostro et pedibus flavis: subtùs albicans, præpectore et pectore summo cum hypochondriis cinerascenti-brunneis, minimè (*ptil. hiem.*) vel obsolete rufescenti-fulvo (*ptil. æstiv.*) adumbratis: tibiis albidis.

The name of *Turdus chiguancoides*, Seebohm, is undoubtedly the first actually published for this species, but in 1882 Dr. Cabanis protested that Mr. Seebohm had overlooked the fact that it bore the name of *Turdus cryptopyrrhus* in the Heine and Berlin Museums, although he had taken a note of this fact. This had doubtless escaped his memory, but that he had intended to sink his name of *chiguancoides* for Cabanis's name of *cryptopyrrhus* is evident from the fact that he had thus lettered the Plate. In any case I think that Seebohm's name could not be employed, any more than names like *bullockoides*, *nubicoides*, and similar dreadful compositions of Sir Andrew Smith's. It is a little surprising that the editor of the 'Catalogue of Birds' did not suppress such a name at once.

T. cryptopyrrhus is a very dark-coloured Thrush, with the rufous on the flanks obsolete or only faintly represented. It is, according to the specimens examined by me, confined to Senegambia, where it would appear to be not very common, as but few examples are in European museums, and Dr. Percy Rendall only obtained one specimen during his residence in that country (Ibis, 1892, p. 215). In my African collection, now in the British Museum, are two specimens received from the neighbourhood of Bathurst (Sharpe, Cat. Coll. Afr. B. p. 21), and the collectors of the Maison Verreaux sent the species from Casamance and Galam (Hartl. Orn. W.-Afr. p. 75).

It has also been recorded by Dr. Reichenow from the Misa Heights in Togoland, where it was obtained in May by Dr. Baumann, and where it breeds. I feel sure, however, that the Togo Thrush is *T. pelios* and not its Gambian representative.

Dr. Reichenow, in a letter, informs me that in the type specimen of *T. cryptopyrrhus* from Casamance, in the Berlin Museum, there is not a trace of any rust-colour on the flanks; and this is certainly the case with the type of *T. chiguancoides*, which I take to be a bird in "winter" plumage, as the fore-neck and breast are dusky-brown. In a specimen in the Liverpool Museum, obtained at Bathurst by Dr. Percy Rendall, and evidently in breeding-plumage, from the worn condition of the feathers, the under surface is white, including the thighs and under tail-coverts, and the fore-neck and chest are pale ashy-brown. On the sides of the body, however, is a faint tinge of fawn-colour, and this I believe to be developed only in the breeding-season.

Adult. General colour above ashy-brown slightly tinged with olive; the head like the back, and the lower back, rump, and upper tail-coverts slightly more ashy; wing-coverts like the back; bastard-wing, primary-coverts, and quills brown, externally ashy-olive; tail-feathers light sepia-

brown, shaded externally with ashy-olive; lores dusky blackish; sides of face and ear-coverts like the head, the latter with whitish shaft-lines; cheeks and throat dull white, with narrow blackish streaks; lower throat, breast, and sides of body ashy-brown, with a faint tinge of orange-buff on the sides of the breast; abdomen and under tail-coverts white, some of the basal coverts with brown margins; thighs white; under wing-coverts and axillaries light orange-rufous; quills dusky-brown below, the quill-lining pale orange-buff. Total length 8·8 inches, culmen 0·9, wing 4·7, tail 3·6, tarsus 1·15.

The description is taken from the type of *T. chiguancoides* in the British Museum, and I suppose that Seebohm figured the same specimen in the Plate, though there is no indication of the fact on the label. [R. B. S.]

TURDUS NIGRILORUM, *Reichen.*

CAMEROONS THRUSH.

Turdus nigrilorum, Reichen. Ber. Allgem. deutsch. orn. Ges. 1892, p. 4; id. J. f. O. 1892, p. 194.

T. rostro et pedibus flavis: corporis lateribus et tibiis brunnescentibus, concoloribus, minimè rufescente adumbratis.

This is the representative of *T. cryptopyrrhus* in the Cameroons, and has the thighs dull ashy-brown like the sides of the body. There is not the slightest tinge of orange colour on the flanks, and the under wing-coverts and axillaries are dull orange-rufous, not pale orange-buff as in *T. cryptopyrrhus*.

The species appears to be confined to the mountains of the Cameroons district. It was discovered at a height of 2700 feet by Dr. Preuss in 1891.

Adult female. General colour above dull slaty-brown, the head a little browner than the back; wing-coverts like the back; bastard-wing, primary-coverts, and quills dark sepia-brown, externally like the back; tail-feathers dark sepia-brown; lores and sides of face dusky brown, the ear-coverts with whitish shaft-lines; cheeks and throat dull white, streaked with rows of blackish spots not very pronounced; fore-neck, breast, and sides of body dull ashy-brown; the abdomen white, with the adjoining feathers of the lower breast ashy with whitish margins; thighs dark ashy-brown; under tail-coverts white, with broad margins of ashy-brown; under wing-coverts and axillaries orange-rufous; quills dusky brown below, pale orange-rufous along the inner web. Total length 8·5 inches, culmen 0·9, wing 4·4, tail 3·0, tarsus 1·3.

The description is taken from a specimen in the Seebohm Collection, received in exchange from the Berlin Museum.

[R. B. S.]

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Fig 1 GEOCICHLA VARIA
" 2 HAPLOC

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Fig.1 GEOCICHLA DAUMA
2 " PARVIROSTRIS

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GEOCICHLA NILGIRIENSIS.

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» 2 » AVENSIS.

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„ PHÆOPYGOIDES.	„ MURINUS.
„ SPODIOLÆMUS.	„ COMORENSIS.
„ TRISTIS.	„ PLEBEIUS.
„ LEUCAUCHEN.	„ OBSOLETUS.
„ DAGUÆ.	„ HAUXWELLI. (Figured on the same Plate with *T. fumigatus*.)
„ CROTOPEZUS.	„ NIGRIROSTRIS.
„ ALBICOLLIS.	„ FUMIGATUS.
„ GYMNOPHTHALMUS.	„ ALBIVENTER.
„ LEUCOMELAS.	„ GRAYI.
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CONTENTS OF PART VI.

TURDUS CONFINIS.
„ MIGRATORIUS. (Two Plates.)
„ PROPINQUUS.
„ RUFIVENTER.
„ MAGELLANICUS.
„ FALKLANDICUS.
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CONTENTS OF PART VII.

TURDUS CABANISI.
„ DECKENI.
„ MILANJENSIS.
„ LIBONYANUS.
„ TROPICALIS.
„ VERREAUXI.
„ CINERASCENS.
„ PELIOS.
„ SATURATUS.
„ BOCAGII.
„ STORMSI.
TURDUS CRYPTOPYRRHUS.
„ NIGRILORUM.
MERULA MERULA.
„ INTERMEDIA.
„ MAXIMA.
„ MANDARINA.
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